SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

Town and Country Inn
Charleston, SC

October 15-17, 2018
Summary Minutes

Scientific and Statistical Committee Members

Dr. George Sedberry
Dr. Scott Crosson
Dr. Eric Johnson
Dr. Yan Li
Dr. Marcel Reichert
Dr. Alexei Sharov
Dr. Carolyn Belcher
Dr. Chris Dumas
Anne Lange
Dr. Genny Nesslage
Dr. Fred Serchuk
Dr. Tracey Yandle

Council Members

Jessica McCawley
Mel Bell

Council Staff

Gregg Waugh
Julia Byrd
Kimberly Cole
Mike Collins
John Hadley
Dr. Julie Neer
John Carmichael
Myra Brouwer
Dr. Chip Collier
Dr. Mike Errigo
Christina Wiegand

Observers and Participants

Shep Grimes
Dr. Wally Bubley
Dr. Mike Larkin
Dr. Howard Townsend
Dr. Heather Christiansen
Dr. Erik Williams
Dr. Tom Okey
Rusty Hudson

Other observers and participants attached.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened at the Town and Country Inn, Charleston, South Carolina, October 15, 2018, and was called to order at 1:30 o'clock p.m. by Chairman George Sedberry.

DR. SEDBERRY: Welcome, everybody, to the meeting of the Scientific and Statistical Committee of the South Atlantic Fishery Management Council. Welcome. My name is George Sedberry, and I am the Chair. I wanted to remind everybody that the meeting is bring broadcast live, and we're being recorded too, and so you're on the record.

The Vice Chair, Rob Ahrens, is out of the country, and so Marcel Reichert has graciously volunteered to fill in and help me run this meeting, and he's quite experienced, and so that will help. The first thing we would like to do, before we get into the agenda items, is do introductions. As I said, I am George Sedberry, and I will start with Anne to introduce herself, and we'll just go around the table and have everybody introduce themselves, and so say who you are and where you're from.

INTRODUCTION

MS. LANGE: Anne Lange, SSC.

DR. SERCHUK: Fred Serchuk, SSC.

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

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

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

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

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

MR. CARMICHAEL: John Carmichael, council staff.

DR. YANDLE: Tracy Yandle, Emory University.

DR. LI: Yan Li, North Carolina Division of Marine Fisheries.

DR. NESSLAGE: Genny Nesslage, University of Maryland Center for Environmental Science Chesapeake Biological Lab.

DR. SEDBERRY: Thank you, and, as you may have noticed, we're missing a few people. We have had some hurricane impacts, and some people just weren't able to make it to the meeting. Some people will be arriving tonight, or maybe even tomorrow morning, and so we expect to have a few more people here tomorrow, and then we're going to have a few members listening in online, via the webinar, and so we will have enough people here to conduct our business.

Before I get to the first agenda item, again, I also want to introduce a couple of people sitting around the edges of the room who might have a few things to say during the meeting, and so that we'll be able to recognize their voices on the recording. We have Shepherd Grimes, NOAA General Counsel, from St. Pete. Then we have Mel Bell, who is Acting Vice Chair of the South Atlantic Council.

MR. BELL: I'm not acting anymore.

DR. SEDBERRY: He didn't win any acting awards, and so he is now --

MR. BELL: Jessica McCawley is the Chair, and she will be here tomorrow. She's in Tallahassee.

DR. SEDBERRY: Okay. Thank you, Mel. Have I left anybody out? Okay. We do have some new members who have joined us since our May meeting, and they were appointed during the council meeting in June, and so, Yan Li, welcome, and Chris Dumas, who is not here, but he will -- He's going to try and join us online?

DR. ERRIGO: He will attempt to join us, I believe tomorrow, and I'm not sure that he will be able to make it today online, but, in between classes, and he has a lot of classes that he was unable to get out of teaching.

DR. SEDBERRY: Okay. Thanks, Mike. I guess we are ready to begin the first agenda item. The first agenda item is to review and approve the agenda. The agenda was sent out with the briefing book, and everybody has had it for a couple of weeks. Is there anything that we need to add to the agenda or subtract from the agenda? Any changes to the agenda as it stands now? Okay. Hearing none, we will move on to the minutes. The minutes from the May meeting were also included in the briefing book. We had the report from the meeting and also the verbatim minutes, and so are there any changes, additions, omissions, or corrections to the minutes of the May meeting? Shep.

MR. GRIMES: Thank you, Mr. Chairman. I would just note, on page 176, towards the end of the statement made by Dr. Grimes, that "non-secular" should be "non sequitur". Hopefully everything we do is non-secular.

DR. SEDBERRY: Thank you for that correction. Any other corrections or additions to the minutes? Do we need a motion to approve the minutes, or do we just -- Seeing no additional changes, the minutes are approved as corrected.

Now is one of the times for public comments. At this meeting, we have public comments at the beginning and the end of the meeting, and then, following agenda items that have a presentation where ideas are presented or views given, we give an opportunity for public comment on that item before the SSC begins its discussions on that item, and so this is the first time that we have for public comment, right here at the beginning of the meeting, and so I am open to any comments from the public. There are no public comments at this time, and, again, we will have additional opportunities for public comment as the meeting goes on and also at the end.

DR. ERRIGO: Just real quick, it turns out that Chris is actually on the webinar now, and so I guess he'll be in and out, but he is on the webinar now.

DR. SEDBERRY: Okay. Welcome, Chris. The next agenda item is SEDAR Activities, and these are Attachments 3 through 6 in your briefing book, and we will get a SEDAR projects update, review preliminary assignments, and look at the terms of reference for a couple of assessments that are coming up. Mike, I don't have the name of the person who is going to be presenting that.

DR. ERRIGO: John and Julia, I think, will be handling that.

DR. SEDBERRY: Okay. Take it away, council staff.

SEDAR ACTIVITIES

MR. CARMICHAEL: Okay, and so we'll fill you in on what's been happening on SEDAR since your last meeting. Things have been I guess a little discombobulated, due to the hurricane impact. We've had meetings planned and scheduled and rescheduled, and we're not as far along on some things, such as scamp, as we had hoped to be for this meeting, and so we won't be able to make progress on all of our action items, because we're just not there, but I will talk about each one of these as we get to it and tell you what our plans are for proceeding with these projects.

I will just start with the projects update in Attachment 3, things that are underway. Cobia, we completed the stock ID process this summer, and the recommendation is for no change in the stock boundaries, and so that assessment is now getting underway with the same stock identification and stock boundaries that we had at the last assessment.

SEDAR 59 will be greater amberjack, and that's a standard. Due to dealing with the MRIP data and the timing of getting that delivered, we ended up advancing the terminal year of that by one year, and that's now underway and expected to be completed in mid-May of 2019, and so that's going to be after your spring meeting.

The other one that is underway now is SEDAR 60, which is South Atlantic red porgy, and that too will be completed probably in May of 2019, after your spring meeting, and so one of the things we will have to think about as these get closer, and presuming they stay on track, and we'll probably talk with the council too, is whether or not we hold off on these assessments and having you act on them until October of 2019 or if perhaps we maybe do a webinar meeting or something to try and get the SSC to be able to take action, perhaps, for the council to consider in September, and so just something to keep in mind.

DR. REICHERT: John, I've got a quick question. I think, in the overview of the SSC, it may be good to add that the members of the SSC that were appointed, and so that may help, once we start asking for additional members to assist in other activities, because, in particular, with red snapper and greater amberjack, there were some delays, and so it would be good to remind folks who are our members that are involved in those stock assessments.

MR. CARMICHAEL: Maybe a table, so you can see it all in one place, rather than spread through the text?

DR. REICHERT: Yes, and, I mean, that or in the text is good, but, when I was reading this, I thought -- I couldn't remember, and it took some digging to find out who were actually the appointed members, and so I think at least that would help me.

MR. CARMICHAEL: Sure. We can do that. The next project I will highlight is scamp, and that's going to be our first research track, and this is going to be a joint assessment with the Gulf of Mexico. We have had preliminary terms of reference and schedule first developed through the analytical leads at the Science Center, one for the Gulf and one for the South Atlantic, and then we had a planning team, which had hoped to meet well enough in advance that we could have a preliminary terms of reference and schedule to approve here, but, due to the hurricane impacts, the first round of hurricane impacts, from Florence, they weren't able to accomplish that.

We also had a group, a subset, as some of you are aware, of SSC folks on this planning team. We had the Gulf and South Atlantic represented that went through that first cut and came up with terms of reference and a schedule that can be approved by the councils, and they completed their work last week. Unfortuntely, it was not in time for us to get it in this briefing book, and so we won't be able to deal with approving the terms of reference for scamp, the action item here, but what we're in conversation with the Gulf Council is trying to have a joint SSC webinar with a subset of representatives from the Gulf and South Atlantic SSCs that would get together before the end of the year and go over and approve those terms of reference and schedule, so that we can keep this project on track and we can get the appointments made and everything else, so this can get going.

I have talked with the Gulf Council staff, and they are supporting the idea of a joint webinar meeting with a subset. We're now trying to work with the Chairs of the two SSCs to find some reasonable dates. Right now, we're expecting that George and Rob will be participating for us, and the Gulf will look to their Chair and Vice Chair, but, if someone else is really interested in serving on this SSC subset, we're looking for say one or two other SSC members.

I don't know when this is going to be. It will probably be say the week after Thanksgiving, or perhaps the second week of December, right after the South Atlantic Council meeting. That's just something to think about. If someone here is really interested in taking part in that, just to be our SSC's representation on approving the schedules and terms of reference, let me know. If not right now, toward the end of the meeting would be fine.

Then the other thing about scamp is we would also -- It would be nice to know who might be interested in taking part in the assessment, and this is a research track, our first research track, and some things about it are going to be a little bit different. One of those things is that the -- What we've had in the past and called an assessment panel, we're going to call it an assessment development team.

This is going to be a core group, consistent group, of decisionmakers for this assessment who will provide advice and recommendations to the Science Center analysts and really serve as the assessment panel has, but also be taking part in the data workshop and through the assessment to provide continuity to the decision process, and what we're looking for is it will be a technical group with SSC and potentially other representatives from both councils, and they will be available to work with the Science Center leads as issues come up that need to be addressed between the scheduled webinars, where we'll go over assessment milestones and progress and have the public review where things stand and take advice from a broader group.

They will be working with those guys to prepare for each of those and really be helping with laying the groundwork for that assessment and the foundation and hopefully providing a greater level of consistency throughout the entire assessment process than we have had in the past, and so this will be a bit of an intensive job for folks who take part in this from an individual assessment, because you will have a number of webinars that will take place, the data workshop, and being available for the review would be a big plus, and so we understand this is a big undertaking, but, if some folks are interested now, it would be nice to know. Once we get the schedule and terms of reference approved, we're going to go to the councils for making appointments, and this project gets started pretty good into next year, but, the sooner we can get people identified, the better, and I see Marcel raising his hand again.

DR. REICHERT: I am very interested in participating.

DR. SEDBERRY: Thank you.

MR. CARMICHAEL: Then one of the first steps that's going to be the next thing is we'll have a stock ID process for scamp, just as we've had for the others. Now, this is not going to be as intensive as it was for cobia with the in-person workshops and separate peer review. It's going to be more like we did for -- I think it was gray snapper in the Gulf of Mexico, and it was a series of webinars and meetings, where a group got together and went through the stock ID information and came up with a recommendation for how that stock should be handled.

That will get started here in the spring, in March, and so it will get started in March, and then it will wrap up before the data workshop and before the data start to be due, so that they know how the data are to be tabulated. This will be a series of three webinars planned for March through July, and so we're looking for a couple of folks to be involved there as well, and, of course, stock ID is a little bit different than the stock assessment itself.

They're going to be looking at spatial information and genetics information and types of things that help you decide where the stock boundaries are, and, right now, the default is that we will use the council boundaries that are in existence unless there is a reason to change that, and so I will be looking for people who are interested in serving on this stock ID process through the spring and early summer in a series of webinars and such.

Again, if this is a lot to take in, because a lot of this stuff has really just been developing in the last couple of weeks, but just keep it in mind and look at your schedules and think about how your spring and early summer looks and maybe get some volunteers before the end of this meeting, because we do need some folks to take part in these different processes.

DR. SEDBERRY: So you need additional SSC members just for the stock ID workshop?

MR. CARMICHAEL: Yes, and they could be the same as -- There can be overlap between that and who is on the planning team and between who does the assessment development team. We haven't set any hard-and-fast rules on any of that, and so whatever folks can do.

DR. SEDBERRY: You can put me down for that stock ID workshop.

MS. BYRD: The other thing I will ask too is we started to do some preliminary work at what data may be available for the scamp stock ID, and it seems like it may be fairly limited, and so, if anyone is aware of any information, if you will come find me, because I'm trying to get together a kind of draft data list, and so I would appreciate any input that you guys may have on that.

DR. SEDBERRY: I think there is one published genetic study, and I don't think there's been anything done since then. There might be something in the works though, and I think the MARMAP program may have tagged some scamp back in the day, and then the Sanctuary Program did some acoustic tagging at Gray's Reef that might be useful, too.

DR. SERCHUK: It would be helpful, once the dates are formalized, if a note could be sent out to SSC members. I know I would be in a better position if I knew the exact dates for some of these meetings. If it didn't interfere with arrangements I already have, I might be willing to serve, but I can't commit now, and I think there are others that won't be able to commit, and so it would be better if -- I recognize that you're looking for people that are interested right off the bat, but there may be others of us on the committee that could participate in the process if we knew exactly when the dates were. Thank you.

MR. CARMICHAEL: Yes, we will definitely do that. Once we get these schedules approved, we will put a little harder press on you for folks to be involved and let you know just when they are. That wraps up scamp.

DR. SHAROV: I just wanted to volunteer, if it's not too late, and also I am interested in the research track or the assessment component, if you need one more member.

DR. SEDBERRY: Thank you.

DR. REICHERT: The more I think about it, I think that table would probably be much more helpful than spreading it throughout the text, and so thinking about volunteering and --

MS. BYRD: I can go ahead and do the one with existing projects now, and I will email it to Mike, so he can send it around, so everybody can remember what they are involved in or not involved in.

MR. CARMICHAEL: You can put it in the report, and that would be helpful.

DR. SEDBERRY: Thank you, Julia.

MR. CARMICHAEL: Then I want to touch base on the MRIP revision assessments, and, as you know, those have been completed, and we'll be discussing those and reviewing those here at this meeting, and I think that wraps up what is underway. Now we have some approvals on tap, and so we would like to get approvals for the terms of reference for tilefish and for snowy grouper, and I guess I could bring these up here on the screen, and that might help.

Let's start with tilefish, and that's Attachment 5. Let's go to that one. Here is the terms of reference for tilefish, and this is a standard assessment. There is going to be a workshop, and Julia will fill us in on the details.

MS. BYRD: This is another where we are working out the schedule now, and so we don't have exact dates for things, but, once we do, we can make sure those are emailed out to you guys.

DR. SERCHUK: I have a small editorial comment. Because we have a couple of species of tilefish, it might be good to talk about which tilefish we're talking about, whether it's a golden or whether we're talking about blueline. I am presuming that we're talking about one or the other of these, correct?

MS. BYRD: Correct. It's golden tilefish, and so we can make sure that's included.

DR. SERCHUK: I think you should put that in the terms of reference, right on top here.

MS. BYRD: We can make sure that's done.

DR. SERCHUK: Thank you.

MR. CARMICHAEL: We're kind of following the AFS, because the official name of what we commonly call golden is actually tilefish, and then blueline is blueline tilefish. Sometimes we refer to this with a small "g", golden tilefish, and that might helpful in this case.

DR. REICHERT: I believe, in the text, it said that the longline study should be considered, and is that --

MS. BYRD: I will give you the general timeframe, preliminary timeframe, for the assessment, and then maybe we can walk through the terms of reference, and so, remembering that this is a standard assessment, we'll be updating the last assessment that was done, and there is flexibility for a few changes as outlined in the terms of reference, and so, Marcel, I think that the study that you're talking to is included in one of the bullet points under Term of Reference Number 2.

DR. REICHERT: Then I will hold my question until we get there.

DR. SERCHUK: Another question I have with these assessment updates, whether they are standard or updates, is it -- I presume that these updates will include, to the extent there are MRIP revised data, MRIP revised data, that helps to use the most recent information, the most recent standardized information, but sometimes the specifications have already been set. If, for example, the updates include data through 2018, for example, and you're doing it in 2019, or it's through 2017, it may be that, from the last assessment, we -- The management process has already established management measures for 2019, for example, based on the old assessment.

It would be appropriate, in my view, to run the assessment that was done in the past using the last terminal year and then using the same projections that were done, and not exactly the same projections, but the same projection approach for those years in which management measures have already been set to see the difference that the MRIP numbers have made relative to what management measures have been established for those years.

In some cases, they may be right on, because the trend may be exactly the same. In other cases, the MRIP numbers are much higher at the end of the series than they are in the beginning of the series, and they have an unequal effect in terms of the weighting given to the last years of the

assessment, and that will have a big impact, or could have a big impact, on the projections that are being used, because you're using a different set of numbers in the last few years of the assessment.

It seems to me that, for all assessments that are done, which management measures were set several years ago, because the assessment was done several years ago, there are two purposes for doing the assessment. One is to use the more recent data, of course, and particularly if we have now a standardized set of MRIP numbers which are believed to standardize the entire series, but also running the assessment through the last terminal year, using the last assessment, and then updating the projections based on the results of that, and we'll get some idea of whether the management measures that have been set from the previous assessment without having MRIP are still relevant.

They could be very close, or they could be very far, and it seems to me that that would be a question that the managers might be interested in. For example, is the information -- Is the projections that we used in setting the 2019 ACLs, or allowable catches, still appropriate, given the fact that now you've used MRIP numbers through those years, and so I'm wondering if we need to have a discussion of that and if we need to make that explicit, or do we just ignore it? Thank you.

MR. CARMICHAEL: Well, I think, if you want to have a run like that, we definitely should have a discussion and make it explicit, for sure, and so Mike has up here including the same terminal year, but I think you're also saying the same assessment, and so you're really saying do like a revision assessment, like we have talked about for these ones now, and carry the projections forward in 2019,

DR. SERCHUK: No, I'm not saying that, because, if you did that, you would be using all the information that was available, even information that was not available at the previous assessment, because some of that will work backwards into it, depending on the model that you use. My feeling is, look, let's be candid here.

The assessment was run in 2015, and we projected five years ahead, and let's say that's the case. Now we have MRIP numbers that we believe are more reflective of what the situation was, and we will come to a document later on that looks at the effect of the recreational catch survey improvements, and some of the trend is exactly the same as it was before, and some of the trends are different. Some of the trends are different only in the end, and that bothers me the most, because those end assessments are likely to change the terminal year values for assessments that were done some time ago and which the management measures now are based off of. It seems to me that we ought to run those previous assessments with the MRIP numbers, stopping at the date, and then use whatever projection methodology to go forward.

MR. CARMICHAEL: That is the revision approach. They just took the old assessment, and they added the corrected MRIP data, and that sounds like what you're saying.

DR. SERCHUK: Those are for the revision assessments that we're going to be doing, correct, but we're talking about other assessments here that --

MR. CARMICHAEL: Right, and I would say that you want to apply that approach to say tilefish.

DR. SERCHUK: Tilefish, Spanish mackerel, or whatever, in addition to updating it for whenever the assessment --

MR. CARMICHAEL: In addition to what we'll do here based on these terms of reference and create a new assessment, but you're talking do the old assessment and just update the MRIP data and see where that would have gotten you in the projections.

DR. SERCHUK: Exactly.

MR. CARMICHAEL: Right, and so you're saying essentially do a revision assessment, what we've called in our language a revision assessment, because all that changed was the MRIP data, and it didn't advance terminal years or nothing, and do the projections through like whenever they were done.

DR. SERCHUK: Right. That's an updated assessment, or a revised assessment, but, in some cases, you are going to be doing a standard assessment as well, and so you're moving things forward in time, right, and that's a different exercise. Am I making myself clear?

MR. CARMICHAEL: Yes, I think so. I think we would be looking at a term of reference that asked for them to do essentially the revision assessment process and updated projections, so we can see where the management would put you.

DR. NESSLAGE: I have no problem with Fred's suggestion, but I don't think it's really necessary for golden tilefish. The recreational catches are minuscule, and they are going to have absolutely no impact. Of all the things that you could do to improve the golden tilefish assessment, this is not one that I would recommend that the assessors -- I am speaking -- This is not one that I think that the assessment team should spend much time on.

DR. SEDBERRY: That's a good point for that species. Marcel, did you have something to add?

DR. REICHERT: I am still trying to get a better feel for what yields us, and maybe I'm entirely sure what you were proposing, and so maybe you can elaborate just a little bit.

DR. SERCHUK: Go to Document A12, and go to the very last page for Spanish mackerel. It's A-12, which is calibration of recreational effort and catch survey improvements. This is a presentation that Mike will be giving to us, and I want you to go to the last page and look at Spanish mackerel. This is one of the things that we're going to add additional years to. That is in a section called Large Changes in Recent Years. You can see that the largest changes in the recent years are --

DR. REICHERT: What page are you on?

MR. CARMICHAEL: Page 53. It's on the screen there.

DR. SERCHUK: It's page 51.

DR. SEDBERRY: It's PDF page 53.

DR. SERCHUK: Okay, and so this is one of the ones that -- I don't know whether Mike characterized this, but we have much larger changes in the relationship between the MRIP data

and the underlying trend in the non-standardized data in the most recent years, and I think that will affect the assessment very greatly over that time period. You may not. Maybe you're more familiar with Spanish mackerel.

I think that when the assessment was done in 2011, the terminal year, that information since 2011 will have a great bearing on what the projected catches will be if we use the MRIP data through 2011 or the recent years, and I'm just saying there is two issues here. One is update the assessment with the most recent data through the most recent terminal year, and that is to give us the most complete picture now of the status of the stock, but then we also have a situation where back in 2011 we didn't use MRIP data.

We used different data, and, now that we have those data, we may get a very different picture of what the stock sizes were, and our projections may be very much different, no matter what metric we use, whether we used F 30 percent, F status quo, FMSY, than we did at the time, and that may or may not have an impact on managers' willingness to change their specifications for those out years based on the projection, but it could, and I think we have a responsibility to managers to indicate that.

DR. REICHERT: Thanks.

MR. CARMICHAEL: I think what this is getting at is just being able to illustrate what the impact of the revision data is on the things that we're going to assess in the future, and that's kind of the gist of it, and then you carry that has management implications and everything else, but, from a --

DR. SERCHUK: And the things that have already been set.

MR. CARMICHAEL: Right. From an assessment perspective, just what is the impact of the changing the revised MRIP data on that stock, because, once you do the additional terminal years and you add these other things, then you have kind of lost that, and you have now a change in the assessment which actually incorporates multiple things, and so, in a way, it's kind of a sensitivity to illustrate what was the effect on this stock from the change in the MRIP data, and I think Genny's point is good.

For some stocks, it's a cost-benefit concern, because there's not a lot of recreational catch, and it probably didn't have a lot of impact. For tilefish, certainly. Snowy may be another without a whole lot of recreational catch, but it could have a little bit more. There is maybe some discard removals and such there, and so that one I'm not as clear on, but I think, if we approached it, that would be sort of the way to do a revisions assessment, so you can illustrate what impact the revised MRIP data had on that stock, and how many assessments into the future we do that I guess we will -- We can discuss as we get to future assessments and terms of reference.

DR. ERRIGO: What if I didn't put it under a particular species here, but put it up here under provide guidance for current projects and just put it for all upcoming assessments that we haven't done yet, but are going to use the revised MRIP numbers? Recommend including a term of reference --

DR. SEDBERRY: For a revision assessment.

DR. ERRIGO: A revision run with the same terminal year as was used in the last assessment for comparison of stock status and then rerun the projections to the same year as they were done in the previous assessment.

MR. CARMICHAEL: I think you need to get the using the revised MRIP data. Revision run with the revised MRIP data.

DR. NESSLAGE: I like the idea. I think, though, to really get at the impact on what the old recommendations would be, you need to use it with the old version of the model, and so slap in the MRIP -- But you need to be specific, because, if you do a bunch of changes to the BAM and -- Then you're going to have a wholly different model, but make sure that we're talking about the previous version of the model with the new MRIP estimates, and that would be great.

DR. SEDBERRY: Good point. Thank you.

DR. ERRIGO: I'm asking the SEDAR folks. Do you think that would cover it?

MR. CARMICHAEL: Why don't we wordsmith this when we're offline, but I think the intent is to use what we have called the revision assessments approach, which is you only update the MRIP data, and you want to do that through the other terminal year and do the projections.

DR. SEDBERRY: We'll be talking a lot about revision assessments later on in the week, and so the wording may clarify at that point.

MR. CARMICHAEL: One benefit of that is it's something that can be done. The MRIP data is available. It's something that can be done well in advance of the rest of the assessment work, and it doesn't have to wait for the data. I mean, if we wanted this for some stocks, that could be done now. Okay. I think that's good. We have figured out what's desired there, and are there any specific things on the tilefish? That's where we are.

DR. REICHERT: You said earlier that we'll go through the terms of reference, or do you want our comments in general right now?

MS. BYRD: We can go ahead however you all want to do it. I guess that one thing I'll point out with the terms of reference is make sure you look at Term of Reference Number 2 here, which is highlighting the changes that can be made to the last tilefish assessment model, and so there are kind of four bullets there, and the first is to incorporate the latest BAM model configurations and updates to data calculation methodologies and detail those changes. The second is to examine evidence for changing selectivity and input data sources and consider implementing time blocks, if warranted.

Third is to reconsider error distributions for fitting the age and length comps, and then the fourth, which is what I think you are referring to, Marcel, is to investigate the potential use of two data sources, two new data sources. One, I believe, is the cooperative research longline survey that you are referencing, and I've talked a little bit with Wally about what that might include, and my understanding is some life history information may be able to be updated from that, potentially, and then the second one is a project that Genny Nesslage is running, and she mentioned it kind of

previously at an SSC meeting, and she will probably be able to provide more information on exactly what may be coming out of that.

DR. REICHERT: Later at this meeting, we are reviewing the Florida selectivity report, and so I would suggest to the committee that if -- Since this is a standard assessment, and so normally we have an opportunity, during the data workshop, to review studies. We may not have that in that same format here, and so perhaps, as an SSC, if there are studies that we feel should be included in stock assessments, we may want to review them before they are being used or considered, and so that's just a suggestion that I have, that perhaps, like we are doing at this meeting, that the Florida study -- We should put that on our agenda and review that before they are used or discussed, and that's just a suggestion that I have to the committee.

MS. BYRD: Just so folks know, the general timeline for this assessment is that data scoping would start in May of next year, and then the standard assessment would take place over a series of webinars and an in-person workshop. Again, we don't have exact dates for this yet. The in-person workshop is tentatively scheduled for January of 2020, and there will probably be a series of three or four webinars between that data scoping and the workshop itself, and so there would be time if you guys wanted to look at that study at an SSC meeting in the upcoming months.

DR. BELCHER: Marcel, can you provide clarification, because I am not really understanding why the SSC would be reviewing white papers going into the assessment. I know the selectivity thing was one of those things that came up kind of after the fact, and we were saying that there was a piece that wasn't put forward, and we were looking at the selectivity, but I guess I'm not understanding why we would pre-examine documents before the data workshop, and that's what I am hearing from you, and so that's why I'm asking for a point of clarification on what you're really getting at.

DR. REICHERT: Whether it's pre or post, I mean, if there are studies that should be -- That are felt that should be considered in stock assessments, then perhaps, as an SSC, we should take a look at it. I mean, that's what we are currently doing with the study that we are reviewing right now, and so I'm not entirely seeing the difference between that review and other studies that are either considered to be included in -- I mean, I am just suggesting that to the committee.

DR. BELCHER: That's kind of where I'm getting confused, because I have never -- I am going to use a term, and, if it's not the appropriate term, I apologize, but I feel like we're pre-screening something to say that this should go into the data workshop, which we have never really done that in the past. I mean, the selectivity thing, I know it came about where it was out there, but it wasn't considered at the time that it could have been considered, and that's why we're looking at it now. If I'm wrong on that, then I'm out of sync, but I was understanding that that came out afterwards.

MR. CARMICHAEL: I think, Marcel, you were talking about this relative to standard and update assessments, and standards in particular, where you have that combined data and assessment workshop, and, in standards, where we have list like this of things we would like to see investigated, and so I don't think that's something that you would do for a benchmark or, in the future, a research track, but, in this case, where you're doing a standard or, in the future, an operational assessment, then you will say, hey, this new study came up and we want to consider incorporating that into that assessment, and you're not going through the full three-step process, that separate workshop, and so it would probably behoove you to look into some studies and think

about whether or not you would specify them in a list like you have here in those kind of assessments.

I think you're both right. Carolyn is right that you wouldn't want to do this for when you have a data workshop and you're considering everything, but, when you're giving instructions for what to consider in a change assessment, it's probably a good idea to maybe do some advance work and see if you think the study is worthy.

MS. BYRD: Any additions or changes to the terms of reference other than the other one that we've noted regarding kind of revision assessment?

MR. CARMICHAEL: I don't think you settled on if you've going to request that for tilefish, and so I think that should be discussed. We talked about it for general, and Genny raised the question of tilefish being such a commercially dominated species, and you already have a number of issues to look at for tilefish, and so I wasn't including that for the tilefish assessment.

DR. SEDBERRY: Yes, I think that's right.

MS. BYRD: Okay.

MR. CARMICHAEL: So it seems like there is no specific changes to tilefish.

DR. SEDBERRY: Okay. Then moving on to snowy.

MR. CARMICHAEL: Do you want to fill us in on some of the particulars?

MS. BYRD: Snowy grouper is an update assessment, and so the last approved assessment was SEDAR 36, and so the model will be updated through the terminal year of 2018, and so update assessments don't really have model changes and things like that, but you're just adding additional years of data to the already existing data inputs and model, and so the terms of reference are pretty straightforward, and so we just wanted you guys to review those and see if you had any additions or edits to them.

DR. SEDBERRY: Anything from the SSC to add to this change? No?

MR. CARMICHAEL: You're doing a good job on those preliminary terms of reference. For snowy, is an MRIP revision run something that is necessary? I don't remember the commercial/recreational split. It's certainly more recreational than tilefish, but --

DR. SEDBERRY: Snowy has some recreational landings from the shelf-edge reef. Certainly, like you said, much more than golden tilefish.

DR. ERRIGO: I would need to take a look to remind myself, but it used to be a lot more commercially dominated until they put in all the restrictions. Now both commercial and recreational are heavily restricted, and so I think they're more on par with each other. They're both really low, but they're both on par with each other since the restrictions went into place.

DR. SEDBERRY: Any other opinions on that? I mean, to me, it sounds like it would be a good species to pick that is a relatively low recreational landings to see what the differences might be between it and -- What the trends might be between it and something that has much higher recreational landings, just as kind of a different kind of case, because it has some. Carolyn, did you have a comment?

DR. BELCHER: Yes, and, just quickly -- Well, now that we're off of -- Was there a TOR specifically addressing the concerns with the steepness parameter and the low --

MS. BYRD: No. Since this is an update, typically you would just use whatever the steepness parameter was in the last assessment, and so there isn't a term of reference noting that.

DR. BELCHER: I just was noting that we had that concern about the methodology that is used and if there was a way to try to see if you could look at that.

MR. CARMICHAEL: So that was the snowy MRIP change, and it wasn't -- There is one year here with a big change, but, overall, there's not a lot of change.

DR. ERRIGO: The snowy allocation is 83 percent commercial and 17 percent recreational. I don't know how close commercial comes to their allocation, and I don't know close recreational comes to its allocation either.

DR. SEDBERRY: Do we or don't we want to do this? This is a species where the revision assessment was about the same, as opposed to having that large increase at the end. It seems like it might be a good comparative species to look at or stock to look at, but I don't feel real strongly about it one way or the other.

DR. ERRIGO: If there's anything you would like to see to help your decision, if there's something that I can provide, I would be more than happy.

DR. BELCHER: Is this something worth thinking about procedurally? I know, right now, we're kind of doing it ad hoc, but, relative to the ABC control rule, maybe this should be something that, if we're making those decisions of what's going to be the cutoff, to say that yes we do or no we don't as we're going forward. I mean, if we're going to do this for a number of species in these next couple of days, it probably would behoove us to come up with something.

DR. REICHERT: I was thinking the same thing, perhaps like, if the recreational landings are over X percent of the total, then this may be worth looking into or something like that, and was that something that you were thinking of?

DR. BELCHER: Yes, just so it doesn't look like we're having thumbs-up or thumbs-down and we're actually applying something that's a little more defensible.

DR. SEDBERRY: I think that's a good idea, and we'll be talking about the ABC control rule later as well.

MR. CARMICHAEL: Yes, and you'll review those four MRIP revision assessments you have now, and you could think about it some there, if there's anything there that says, yes, that's a stock

where this is probably worth doing. Maybe you find some trait, and so I think, for now, it seems like not a lot of specifics to add for snowy grouper. Keeping this in mind, if you want to come back and say, yes, let's go ahead and do that for snowy grouper, then you can do that before we leave here.

I have one more bit of SEDAR, if we're ready to move on, and this is looking ahead to 2020 and how the Steering Committee and Science Center are approaching the transition to the research track and operational assessments and handling better management of the overall SEDAR workload, particularly as it pertains to the data demands for different assessments, and one thing, since Clay took over as the Director of the Science Center this spring, what he has tried to do is account for the data burden, the amount of data work that's required for an assessment.

Of course, that varies between a benchmark and a standard and an update, and so that has an impact on how many data deliveries can be handled by the Science Center collectively, and that has a handle -- That has an impact, of course, on how many assessments can be done through SEDAR across the board, and so, right now, we know that preliminary work on the 2020 assessments that are planned exceed the Science Center's ability to provide data, and so what Dr. Porch has asked each of the cooperators to do, and in our case that's the councils, is to provide some guidance on your 2020 projects and how involved they might be.

We just looked at the standard and update terms of reference, and we have specific things that are asked to be changed. What we need to do is provide the Science Center some preliminary information on what we think we might want to have changed for the 2020 assessments. These aren't the terms of reference, but this is just kind of a first-cut of like what's the big issue within a particular stock, and we need to give that to them so that they can refine what the data burden is going to be for 2020 and know if, okay, these assessments are going to be pretty straightforward, more like an update than a standard, and maybe they can do more assessments than what they thought and we don't have to trim. On the other hand, if there's a lot of data work, we may have to give up some things for 2020 just to balance the books, in terms of the Science Center's capabilities.

What we're wanting to do now is the Steering Committee has asked that we provide details on what we're calling the scope of work for our 2020 assessments by March of next year, and so that will be before you guys meet again. Then, when the Steering Committee meets in May, they are going to use that, and the Science Center is going to evaluate that, and they will decide what the real data burden is.

We really want to get to where say, for spring of 2019, we would be looking at the 2021 projects, and we're not quite there yet, and so hopefully, when we get to 2020, we are ready to look at 2022, but this is the first step, and it's kind of new for everybody, and so I just wanted to walk you through this, and our assessments are Spanish mackerel and gag, and what I did was looked back at the prior assessments to see what the SSC recommended and see what the reviewers recommended and try to come up with some things that would lay out the scope of those projects.

I ran this by the Beaufort team, to get some feedback from the assessment perspective, and so this is the result of staff and those guys working together to come up with what we think is a pretty reasonable scope of work for these few assessments, and so, if we look at Spanish mackerel, one of the things noted is that the -- When the last terminal year was, and so, in Spanish, it was 2011,

and so we're talking seven to eight years of new data, and that -- Of course, the more years of data you add, the more data work you're talking about and the more potential otoliths to be read and the more survey work that might be required, and so that's an important fact.

That's the first part to model in additional years, and then the other important part, of course, is the data updates, and what was suggested for Spanish was try to update growth and reproductive models, if additional samples are available for small fish, and so, as is often the case, this is one where they felt there is a lot of uncertainty in the origin of the growth curve and when it started to bend over. They felt like they really needed samples of these smaller fish. It may be that we haven't found those samples yet, but, if they are, then there would be a need to update those, and that would be a little more data work.

Then the other is talking about any information on steepness, and so steepness comes up a lot, and I think they used a general steepness relationship, and there was a request to maybe look at more similar species, maybe similar pelagic species. Those would be the data changes, and then, for the process, this also affects the involvement of data people in the assessment itself and the overall burden to the Science Center participants across the board as well as the SSC, and so we're trying to provide some guidance on how this would work, and what we're suggesting for Spanish initially would be that we would have an assessment panel with some webinar meetings and not to have an in-person meeting, and so this would really be a pretty simple, straightforward, light, standard-type of an assessment.

Beginning in 2020, it's going to be called operational assessment, as we fully transition to research track, operational assessment, framework, and so I will pause here, if there is any other things that people think or recall from Spanish, or if you're aware of any new research or any new studies, and now would be the time to kind of get that in there, because that could affect this project as well.

DR. REICHERT: I can look at the details, and I'm not sure, but one of our graduate students worked on Spanish and king mackerel, and she was looking at year-zero and year-one, which I believe, in the previous assessment, were lumped, in terms of an index, and I think she has some additional information that actually separates those two, and so that may decrease the uncertainty relative to a potential index, and that's the only study that I'm aware of that may be helpful, and I can get you the details of that study. The thesis was completed, and she is working on the manuscript.

MR. CARMICHAEL: That would be good, if we could put the details in there, probably as a data update, I suppose. Yes, that would be great.

DR. BELCHER: I'm circling back to the snowy thing. Is there a potential for at least making sure that we have the wording in there about sensitivity relative to steepness? We're not asking to change anything, but it just seems like -- With Number 3, it says to identify sources of scientific uncertainty that are not already included in the model uncertainties.

If we're not at least acknowledging our concerns going forward, is the assessment going to take that chance of rerunning exactly what we did to only have us come back with the exact same comment again? I mean, I feel like at least if we ask for that sensitivity -- We're not asking them

inherently to change it, but we're at least getting some measure of what's going on, if that truly is a problem.

MR. CARMICHAEL: You can add something like that if you -- Maybe provide instructions on what it should be. Did we say something before about what type of sensitivity could be done on steepness?

DR. BELCHER: It's more relative to the concern with the FMSY, is that the FMSY estimate is corresponding to the F of 26 percent of SPR, which we felt was low relative to similar species types, and so they were looking at values of 30 to 40 percent SPR being more appropriate, and so I don't know how you best couch that, but it just seems like -- Again, I just feel like we're missing an opportunity to make sure that somehow we're bracketing what's being done rather than -- We are acknowledging that we have a concern. Somehow it needs to be addressed going through, regardless of what type of assessment, and, again, I don't know -- Sensitivity, to me, seems like the easiest way to do it. At least we have a conversational piece moving forward.

MR. CARMICHAEL: It sounds like the SSC is concerned with the estimation of FMSY and may want to consider alternative proxies, and so you would request some sensitivities, maybe, to try to provide more insight on the steepness estimate or assumption and alternative MFMT proxies, because I think the SSC choosing what you think is the appropriate proxy is something you can do. It's an update, but you set the MFMT and you specify that, and so I think, in terms of when you're reviewing an assessment, if you decide another proxy is more appropriate than what may have been used before, that's fine, because it's a little different than when you actually have a free, untethered estimate of FMSY. Do you want it limited to that specific -- I mean, you've got SPR values of 30 and 40 percent, and do you want it more general?

DR. BELCHER: I would think more general. I mean, I'm just going off of what the language was that we provided going forward, is that we would expect it to be more to this ballpark, but I think any given range that pretty much above and below brackets it would probably benefit.

MR. CARMICHAEL: I think it would help to get in the language that the SSC is interested in considering alternative proxies to MFMT, because that helps inform the analysts why you're doing it, which then they can apply their best judgment and understand the assessment to help you in that endeavor.

DR. SHAROV: A quick question. Wouldn't that constitute a substantial change and go out of the bounds of the assessment update, a change in reference points?

MR. CARMICHAEL: Well, I don't necessarily think so, because the reference points are something that you recommend. The assessment is a tool that gets you there. When you have something that's based on a proxy, I think you do have the ability to consider the most recent information and whether or not the proxy is still holding up with more years of data and a new assessment, and, if you still have concerns with that proxy, I think you do have the ability to consider that. It's kind of an interpretation, to me, and it's not a strict outcome. As we've talked a lot before, when you don't have a free steepness and a straight-up estimate of FMSY, the SSC has some judgment there to apply, in terms of what you think is appropriate, and that seems to be what Carolyn was getting at.

DR. SHAROV: I would certainly agree, but way too many times that I wanted -- The process was more important than actually the science or the meaning, and so that's why I asked that question. Certainly I would agree that we always should be looking at the fuller characterization of the uncertainty, to the extent possible, and finding the most robust approach, and so I would support that here, but, way too often, to me, that seemed to be the case. A change in reference point may lead to the change in the definition of the status, and therefore that is why I was concerned that this may be out of the box.

DR. SERCHUK: It seems to me that this also has some relationship to the harvest control rule document that we've been discussing and going over, in terms of what type of assessment it is, what sort of uncertainty there is, what sort of parameters we use when we're in certain categories, and so, if that is the case, I think it goes just beyond a case-by-case basis. It may be a case-by-case basis, but it may fit into a larger category of cases, and I think we ought to keep that in mind. That's all.

DR. BELCHER: But the thing that concerns me is that we identify something that's causing us a little bit of concern and conservative measure, and, if we keep it an update, that means that we can never revisit that until we kick it out of an update thing, and I would hope that we wouldn't perpetually keep it in an updated thing, but I still feel like, if we've got that identified, and there is a simple solution to at least look at what could be -- Because, again, maybe what that means is that, rather than wait five years to do the standard or whatever is proposed next, we talk about moving it up sooner, because it's obviously a concern.

DR. REICHERT: I agree with Carolyn, and there is two parts to that. One is, at some point, I believe, we have in the past, and I assume we will have in the future, or we are asked recommendations as to whether we feel something was a standard or an update, and so there's that. If we feel strongly about the discussions we had at previous assessments, I think we have a mechanism to address this. Maybe not for these at this point.

I completely agree with you that what we don't want to put ourselves in is rehashing issues that we have discussed at previous occasions, but, because of the definition of the assessment type, we are not able to address that, and so we are forced to rehash that same point, and so I think we should try to avoid that, and so I agree with you in that respect.

DR. SEDBERRY: Any additional comments?

MR. CARMICHAEL: So, to be clear, we'll add this as a term of reference?

DR. SEDBERRY: Yes.

MR. CARMICHAEL: To build off of what Marcel just said, go back to -- Going back to this scope of work, that is exactly what this scope of work discussion is intended to do and why it's happening now, and, when we meet again, we'll look a few more years into the future on this for sure, because this is the chance to get that kind of information in there, and I think -- We talked about Spanish before we hopped back out and clarified snowy, and gag -- There was less comments on gag, as I recall.

The last assessment had a terminal year of 2012, and so we're looking at six to seven years, and we'll be applying the current BAM since the 2014 update. The prior assessment was an update. One of the questions in that one was steepness, and it couldn't estimate steepness, and so I think it would be worth considering whether the model is able to reliably estimate steepness at this time, and I think, given the discussion we just had, that seems perfectly appropriate, and I'm glad that we got that in there for gag, looking ahead.

Then the data updates would be considering including the SERFS video index. There were comments about the lack of fishery-independent coverage for gag, and so maybe SERFS can help us there. There was a question about discard mortality, and there might be some more recent studies we would like to get included and then a similar process is add some SSC representatives, and so a panel meeting via webinar. Then it's suggested that the next assessment -- This is what you guys suggested, that the next assessment should be a standard and should evaluate the fixed steepness assumption and consider including the video index, and so those are incorporated up there in the bullets, and this will probably be kind of like a standard. If there is any other things that folks have in mind or know of for gag, let's try to get them added.

DR. REICHERT: I was reminded of the black grouper assessment, where the identification was a big issue, and I think it would be really good to investigate how that may affect this gag assessment also. There may be some new information that can address that, and so I think that's important.

MR. CARMICHAEL: Yes, that's a good point. We can't leave that out there blowing in the wind and causing us potential problems.

DR. SEDBERRY: Any additional comments?

DR. ERRIGO: The model, the current BAM configuration and all that, does that include the changes to how they are estimating the fits to the age and length comps, the multinomial --

MR. CARMICHAEL: Yes, it would include the best approach that's in effect now for doing the assessment fit. That was all the SEDAR items, unless someone has a --

MS. NEER: (Ms. Neer's comment is not audible on the recording.)

MR. CARMICHAEL: Yellowtail snapper in the Gulf, the Gulf and South Atlantic, being led by the Florida FWCC is underway. I think we have people lined up and everything, and we're all good there. One other thing that I wanted to bring to you all's attention is you know we have new council leadership, as we mentioned earlier. Your former council liaison, Ben Hartig, termed out after his nine years on the council, and so that left us without a liaison. Steve Poland, who is now serving on the council for North Carolina, taking the seat that was formerly filled by Michelle Duval, Steve Poland has agreed to serve as the SSC liaison. I just wanted to put that out there so that I don't forget.

Due to hurricane impacts, and he had quite a bit of damage at his house, he wasn't able to make this meeting, but, at the council meeting two weeks ago, he did agree to do that job, and so we should see him in the future, and I think those of you that worked on some of the SEDARs recently are familiar with Steve, and so we will welcome him at his next meeting, and, just to let you know, we do have the liaison seat re-filled.

DR. SEDBERRY: Thank you, John. I meant to mention that during introductions, but I forgot.

MR. CARMICHAEL: Me too.

DR. SEDBERRY: All right. Any final words on SEDAR?

DR. NESSLAGE: Just a thought to Mike's earlier question. I believe, and hopefully Beaufort staff can correct me if I'm wrong, that the last gag assessment was the first time the robust multinomial was rolled out, and just no one questioned it at the time, because the answer was favorable, and so just a little fun fact there, and I believe that's correct, because I used it as my guide for the golden tilefish update.

DR. ERRIGO: I thought it had been snowy, but maybe it was gag. It was one of those two.

DR. SEDBERRY: Okay. I think we're ready to move on to the next agenda item, which is the review of the Florida FWCC study on red snapper. Just a reminder to SSC members, we had Churchill, Eric Johnson, and Marcel assigned to this to keep notes, and so please help Mike out in taking any notes that would be important for us to report out to the South Atlantic Council on. Who is leading this? Heather. Thank you, Heather, for being here. Take it away.

REVIEW OF FLORIDA FWCC STUDY

DR. CHRISTIANSEN: Thank you. This study was conducted by FWC, and it was funded by a CRP grant, and we looked at the size selectivity of fisheries-independent hook gear and chevron traps relative to underwater cameras for red snapper and other reef fishes. Currently, the SERFS chevron trap survey is providing fisheries-independent data for stock assessments. However, there are some questions as to the appropriateness of the flat-topped selectivity, especially for red snapper, and so, in this study, we really wanted to look at the size selectivity of the chevron traps to fisheries-independent hook gears by comparing them to the stereo baited remote underwater video cameras for red snapper. In this study, in that report, we also had data on age, sex, and the reproductive condition. However, I'm not going to be discussing that today.

We had 100 stations that were randomly selected and stratified by stat zone and depth, and, at each station, we also selected two additional stations, and so for a total of three. They were at least 200 meters apart, and we sat either a chevron trap or our standardized hook gear or unstandardized hook gear at each one of those stations, and, along with each capture gear, we set a stereo-BRUV.

The chevron traps were constructed and deployed following the SERFS protocols, including using the same type of bait. In summary, they are arrowhead-shaped traps that were thirty-five-by-thirty-five-millimeter square mesh plastic-coated wire, and they soaked for ninety minutes. The stereo-BRUVs were mounted to the traps and recorded for thirty-five minutes.

The first hook gear we used was our standardized, and we termed it the repetitive-timed drop, and, for this, we had three anglers on each vessel, each fishing a two-hook rig, and so they either had 8/0, 11/0, or 15/0 hooks that were baited with Atlantic mackerel. They fished simultaneously for two minutes, or until they caught a fish, at which time they removed their rigs from the water.

They identified the species and took standard fork and total length, and so there were ten of these repetitive drops at each station, and we deployed the stereo-BRUV prior to any sampling.

The second hook gear we used was our unstandardized hook gear, to kind of get a representative of how the industry is fishing, and so we directed the captains to target red snapper, and we relied on their knowledge, and so they were able to choose what gear and tackle and bait they were using for this fishing, and we had three anglers fishing for thirty minutes, and we recorded all the deployment details and any changes that occurred over the thirty minutes, and, again, we deployed the stereo-BRUV prior to our sampling.

Between traps and our hook gears, there was a slight difference in the setup of the stereo-BRUV. Not with the cameras themselves, but, for the traps, it was mounted above the throat and recorded for thirty-five minutes, but, for the hook gears, because it was deployed separately, it was in a stand-alone system where we actually had two stereo-BRUVs that were facing 180 degrees away from each other, and we also had two GoPro cameras on there, and they recorded for thirty minutes.

To process the videos, each video was read for twenty minutes, and only one video was read for the abundance estimates, and so, for the hook gears, the video was randomly selected unless one video had much higher video quality, in terms of clarity. It wasn't chosen based on anything to do with the fish, and we measured relative abundance using max N, which is the maximum number of individuals of a single species in any one frame. Then we measured the fork length using SeaGIS EventMeasure.

Just to give you a better look at the actual setup of the stereo-BRUV, it actually contains three cameras, and so the top two are still cameras, and so we have a left camera and a right camera, and this is what we used to obtain our measurements, and then the bottom one is the video camera that was used for abundance. To ensure that we were having accurate measurements, each camera was calibrated both pre and post-sampling, and so, to do that, we have this calibration cube that was filmed underwater in several different positions, and each one of those little numbers is a known distance, and so you film these cubes underwater, and then you put it into SeaGIS CAL, and it creates a calibration factor for each camera specifically.

We then film laminated fish cutouts and this calibration bar and put that into EventMeasure, which is what we use to measure the fish, and we compare the video-obtained measurements with the manually-obtained measurements for this, and any cameras that were outside of a 5 percent margin of error were not used for sampling.

Just to give you a better idea of how the measurements are actually being obtained, it's based on the left camera and the right camera and the intersection of that in the 3-D space, and so we're marking the tail and snout in both frames, and then that's how we get our measurements, and so, in practice, this is what you would see. You would see the frame from the left camera and then the frame from the right camera, and you mark each fish individually, and then it gives us our lengths.

We also have several factors that we consider when we're obtaining our measurements. As I said, you have to be able to mark the tail and the snout in both frames. If it's not visible in both of them, you're not able to obtain a measurement. You can play with the contrast and brightness to try and

clarify the picture, but sometimes if, for instance, a fish is moving fast, it makes it blurry, and so it's harder to get the accurate measurement.

You also have to consider the angle and the distance. If fish are at a greater than forty-five-degree angle, the measurements are hard to obtain, or if they are further away than five meters, and one of the ways we can gauge how our measurements are is it does provide a precision measure, and that gives us an idea of if we are getting an accurate measurement. Basically, we're not able to obtain measurements for all individuals, but we are confident in the measurements that we are obtaining.

Once we had our measurements obtained from video, we were able to compare them to the measurements obtained for each of the capture gears, and we did this in several ways, the first being by looking at their length frequency distributions, and we used kernel density estimates, because this is sensitive to both the shape and the location in the length frequency distributions.

We then also, to get an idea of the shape of the selectivity curve, we looked at the catch proportions of each individual gear relative to the stereo-BRUV. Then, lastly, because we were using three different hook sizes for our RTD, we wanted to look at the indirect selectivity of those hooks, and so we fit four models, and we actually fit those models twice, the first time assuming equal fishing intensity across hook size and then the second assuming that the fishing intensity is proportional to hook size, and so, as your hook size increases, the fishing intensity increases.

Getting into our results, we were able to complete ninety-three of the 100 stations, and we captured over 1,100 red snapper, and on the right here is just the breakdown of how each -- How many fish each gear caught, and I just want to point out that there was well over 100 for all of the individual gears.

The first gear comparison that I'm going to go through is between trap and the stereo-BRUVs, and I just want to remind everybody that this data for the stereo-BRUV is only the ones that were on the traps. These are not anything with the hook gears, and, when I get to the hook gears, it's only the stereo-BRUV respective to the gear it was fished with, and so, looking at the length frequency distribution for the traps, you can see the highest frequencies are between 200 and 500, and, once you get to 500 millimeters, their frequencies are very low. However, when you look at the data for the stereo-BRUVs, it's wider, and it's catching smaller, and the frequencies are higher for those larger fish.

This is also reflected in the kernel density analysis, and so, on the right, the data has been standardized, and that is how you look at the shape only, where the left is giving you an idea of the shape and the location. The gray bars here, that is your mean kernel density estimate that has been created plus or minus one standard error, and so, basically, if the two individual distributions are outside of that gray bar, it's indicating that it's different from your known model of no difference between the two, and so, for both of these, there is a significant difference, and, when you look at the graph on the left, you can see that the red line for stereo-BRUV is higher between 600 and 800, and so it's really those larger fish that are driving the difference between the two distributions.

This is the plot of the catch proportions, and, here, a value of zero indicates that all the fish in that size class were captured or observed on stereo-BRUV, where a value of one would indicate that

all the fish were captured in the trap, and so you can see, for the smallest, all the fish were observed by stereo-BRUV. However, the fish were proportionally more likely to be captured in traps at the smaller size ranges, and that decreases as the size of the fish increases, and you can see, at the highest size ranges, all the fish were being captured or observed on stereo-BRUV.

The next gear comparison we're going to go through is between the RTD and the stereo-BRUVs, and here, again, the highest frequencies were between 300 and 500 millimeters. However, after 500 millimeters, you are getting slightly higher frequencies than what you saw with the traps, and the stereo-BRUVs had a slightly wider range, size range, because they were capturing smaller fish that we were not getting with the RTD, and, for the kernel density estimate, there was no difference in shape, indicating that it is the location that was significantly different, and, looking at that red line on the left there, you can see it's because of the presence of those smaller fish that were being observed by the stereo-BRUV.

When we look at the catch proportions for RTD, again, that's reflected in that proportionally all the fish were captured, or observed, on stereo-BRUV at those two smallest size classes, and, as you increase in size, proportionally more fish were being captured by RTD.

The last gear comparison is between the captain's choice data and the stereo-BRUV, and this has very similar patterns to what we saw with the other hook gear and with the highest frequencies being between 300 and 500 for the captain's choice, but you're still getting representative catches higher than 500 millimeters, and, for the stereo-BRUVs, you're getting a slightly wider size distribution. Again, they were catching those small ones.

The kernel density estimate results were very similar to what we saw with the RTD, in that the shape was not significantly different, but the location was, and, again, this is because the stereo-BRUV is seeing those smaller individuals that we were not catching on the hook gear. When we look at the catch proportions for the captain's choice, you can see that both the smallest and largest size classes were being observed by the stereo-BRUVs and, as size increased, proportionally more fish were being captured by the hook gear.

I just wanted to kind of put all three catch proportion plots up together, and so, on the left, we have the trap. In the middle, we have the RTD, and, on the right, we have the captain's choice. You can see the differences between the three gears, where, for traps, as the size of the fish increased, proportionally more were observed on the stereo-BRUV. However, for RTD and captain's choice, as the size of the fish increased, proportionally more was being captured in the hook gear.

The last selectivity analysis we did was for the individual hook sizes, and so on the left is the selectivity curve, and the best fit model was the normal model with assuming proportional intensity, and that's why the three curves have higher relative retention with increasing hook size, and so the black line is for the 8/0 hook and the dashed line is the 11/0 hook, and the dotted line is for the 15/0 hook.

Along with increasing max relative retention, there is increasing size at the median, and so, as you increase hook size, you are catching larger fish, and the deviance residuals were generally small, without any overlying patterns for all three hook sizes, and so, overall, the largest fish were observed by the stereo-BRUVs for all gear comparisons, and the hook gears caught larger fish than the traps did.

Looking at the catch proportions, it suggests that a dome-shaped selectivity would be appropriate for the traps, and, for the hook gear selectivity, there is evidence that dome-shaped may also be appropriate. However, the sample sizes at the largest size classes were low, and so we just need to consider that as well, and that's all I have. Thank you.

DR. SEDBERRY: Thank you. Mike, do we take public comment now, or do we just have to take questions first?

DR. ERRIGO: (Dr. Errigo's comment is not audible on the recording.)

DR. SEDBERRY: All right. We'll have clarifying questions now and then public comment and then discussion. Any clarifying questions from the SSC?

DR. SHAROV: Obviously depth and the vision of clarity affected your estimation results when you used the camera, because obviously, particularly in automated counting, and in some conditions you could probably see and identify the fish within one meter of depth and another maybe seven, and so that certainly may affect the density estimates, and how was that taken care of in your estimation methodology?

DR. CHRISTIANSEN: I wasn't looking at the abundance in this part of the study. I was just doing the size selectivity, and the sizes are only measured at one point in the video so that you're not measuring the same fish repeatedly, and so it's only at one time point when we can obtain the most number of measures on the screen, and so it's just so you're not measuring the same fish over and over again.

DR. REICHERT: In the report, there is a graph of CPUE, and so, at some point, I assume you took that into account with your CPUE, because I'm still trying to think how the visibility may have affected that, because it's selectivity, and so every gear has a selectivity, and so I'm still trying to think about that, but how did you handle that in estimating your CPUE that is recorded in the report?

DR. CHRISTIANSEN: Handling the visibility for that?

DR. REICHERT: Yes, and there is a -- I think it's Figure 18, and we can -- Perhaps this goes into the discussion, and so I'm more than happy to hold my question until the discussion.

DR. SEDBERRY: Are there any more clarifying questions?

DR. REICHERT: This may go into the discussion, and so I'm more than happy to hold that question until after the clarifying --

DR. SWITZER: In the report, the CPUE calculations were just number observed at any station, and there was no denominator adjustment, because adjusting is a little bit tricky, especially for the video stuff, as you said. Now, in terms of the point that you brought up, in terms of visibility, yes, it's going to affect the number that you would count and the volume being sampled. These are baited systems, and so, typically, that can mediate, to a certain extent, the effects of that.

In most cases, if we can't see at least a meter, we don't even read the video, and so we usually have at least decent visibility to them, and, as Heather mentioned, at least these old systems that have fairly narrow baselines of the cameras, we really, typically, can't get measurements beyond three or three-and-a-half meters anyway for these systems. We have different ones that actually do better, but --

DR. SEDBERRY: Thanks, Ted.

DR. REICHERT: Was the video set up baited or was it -- That's an unbaited system, correct?

DR. SWITZER: No, these are all baited, because the trap is baited regardless, and so they're all baited.

DR. SHAROV: Just a quick follow-up. Since the measurements of the fish were taken for, I assume, the distance from the center of the trap to the fish, that could be calculated as well, at least for those that are measured, right?

DR. SWITZER: For every one of these, you actually have a measurement of how far away they are from the camera and the actual position in the quadrants.

DR. SHAROV: So then we could potentially estimate the average distance of all the fish that were measured and sort of define at least the radius of the area for which the fish were counted.

DR. NESSLAGE: I was wondering if you could talk a little bit, and I saw some of your later slides, about the inshore/offshore comparisons, because it looks like maybe -- Am I interpreting that right, that the traps aren't, in the offshore region, as under-representative of the older ages as the -- Or am I misreading that, because it's squished on the graph.

DR. CHRISTIANSEN: The larger fish that we were capturing were inshore in there, and so there was a significant difference by depth, and so this is split, and the blue line is representative of inshore, and the red is offshore, and there was a significant difference between them, and that was being driven by the higher number of large fish inshore.

DR. NESSLAGE: How does that relate to then the visibility issue, the inshore versus offshore? Is there a difference in visibility?

DR. SWITZER: Offhand, I don't know.

DR. CHRISTIANSEN: I don't have that. I don't know.

DR. SWITZER: I think our abundance estimates were similar inshore and offshore, and so I don't know, offhand.

DR. SEDBERRY: I have a question that is kind of peripheral to this, but I was wondering if there is anything in these baited cameras, either the trap cameras or just the baited cameras, that could help shed any light on the distance that fish are attracted to the bait. This has kind of been a long-time question about how -- What is the area fished by these traps and what is the density of the

fish in the trapped area, and could you ever calculate that by determining how far the fish are attracted? Is there anything in your data that might help answer that?

DR. SWITZER: I don't think so. I think, again, anything we visually assess is within five to six meters at maximum. You could couple something remotely, like acoustic surveys or something, that might provide insight, or some of the work that Nate has done with telemetry, but, at least from this, there's not much you can do.

DR. SEDBERRY: Any other clarifying questions?

DR. LI: Two questions. First, I saw the slides and the different gears and the things you applied for different soak time, like timing, like for thirty minutes, or ninety minutes, and the video was for thirty-five minutes, and the captain's choice is thirty minutes, and, for the other one, the hook is like two minutes and then repeat for --

DR. CHRISTIANSEN: Yes, there's ten --

DR. LI: When you do the length frequency, how do you think those different soak times would affect outcomes, which means you may have a different sample size and we maybe could compare a sample size of like fifty versus 100.

DR. CHRISTIANSEN: Yes, and so we were using like the standardized time that is used for each of those gears, and then, for the cameras, that is typically the time that we're using, but there is a possibility that there were larger fish later that we would have missed, or earlier, but being that for this the trap had the longest soak time, and we still weren't getting those, if the trap had a shorter soak time than the camera, I would think that maybe the camera was able to see the larger fish that the trap wasn't there for, but, since the trap had longer than what the camera -- Does that make sense?

DR. LI: I cannot think of a way of how to standardize -- In this case how to standardize -- When you look at the fish size frequency, how can you standardize by time? I know that CPUE that you can standardize by time, but I cannot think of a way of how to standardize by time when you look at the frequency.

DR. CHRISTIANSEN: Because we're also not measuring every single fish that we see on the camera, and so it's only at one time point.

DR. LI: Okay, and the second question is each station you applied all of those different gears, right, and did you apply at the same time the spatial arrangement and like that far away from each other or --

DR. CHRISTIANSEN: We selected the primary site, and then two additional sites were selected at least 200 meters away, and then, at each site, it was randomly selected gear was set on the primary versus the two additional, and so it wasn't at the same exact time, but the camera was -- For the trap, the camera was on the trap, and so they were fishing concurrently, and then, for the two hook gears, it was deployed prior to, and then the hook gear sampling occurred right away.

DR. LI: They are far away from each other, all the gears?

DR. CHRISTIANSEN: Yes, at least 200 meters.

DR. SEDBERRY: The baited cameras were deployed before any removal sampling.

DR. CHRISTIANSEN: Yes, that's correct.

MS. LANGE: For the stereo cameras, I think it said that you videoed for thirty minutes, but selected twenty of those, twenty minutes, and how did you select what snapshot you would be using for measuring the fish or counting how many fish were there of the various sizes for the CPUE?

DR. CHRISTIANSEN: For the measurements, it was -- The twenty minutes started as soon as the dust had settled, and so that's when the twenty minutes had started, and then, in terms of when they measured the fish, it was when they had the most fish that they could obtain measurements for in one still.

MS. LANGE: So you would go through the twenty minutes frame-by-frame and pick the one frame that had the greatest number that you could actually see and measure?

DR. CHRISTIANSEN: Correct.

DR. REICHERT: You explained where there were more than 300 fish, and that may not be the case for red snapper, and you concentrated your presentation on red snapper, but a 999 was recorded, and did that mean that 999 was a number that was included in the analysis, or was that basically the code of more than 300?

DR. CHRISTIANSEN: That code is for more than 300, and so, any time there is more than 300, it's coded as 999.

DR. REICHERT: So, in the analysis, that basically was 300 fish?

DR. CHRISTIANSEN: Yes.

DR. CROSSON: This is my naïve, non-biologist mind asking this, and so I'm not sure who I'm asking it of, but do red snapper have the habit of -- Do the larger fish tend to bully smaller fish away from food sources? Is there anything in the biology of the species that might cause that to happen?

DR. CHRISTIANSEN: Not that I know of.

DR. REICHERT: But wasn't the -- Part of this was because people felt that the larger fish were a lot more shy and were not attracted to the trap, and so there is a behavioral component that was part of why this study was done, and so a follow-up question for me was wouldn't the same be true for hook-and-line, where you have a more aggressive smaller -- If that's true, and I'm not sure, but, if that's true, wouldn't that smaller fish be more attracted to the hook?

DR. SWITZER: In theory, I would say yes. Again, the other thing that sometimes you see, in the Gulf especially, is the really large fish de-couple from reef habitat, and so the biggest, oldest fish are actually on sort of sand bottom, which, again, none of these gears really effectively targeted.

DR. SEDBERRY: Any other clarifying questions? Any public comment? Seeing no public comment, we can just now move on to general discussion of this research.

DR. REICHERT: In the discussion, you mentioned that the contraption on the top of the trap may actually have affected the catchability of the trap. Can you elaborate a little on that?

DR. CHRISTIANSEN: I believe there was -- Some people had raised a concern that the actual size of the stereo-BRUV on the trap would scare away fish, and so I think we were just accounting for that in the discussion there. Did you want more or --

DR. REICHERT: Well, somehow, and it may be because of the conversation we had, but somehow I thought that you guys looked at the trap without the video on top, but maybe that was just a conversation we had.

DR. SEDBERRY: My memory is that is that they were trying to avoid direct comparison to the SERFS trap, because the camera array was so different in size that you couldn't directly compare them.

DR. SWITZER: Yes, and we actually looked briefly into the size comp of the SERFS data, but, due to different spatial partitioning of effort and timing of sampling, I don't know how comparable they were. Their size was slightly larger in the traps, in the ones that we observed, and maybe thirty or forty millimeters larger, but not enough to completely offset the results seen from the study. We couldn't account for depth differences in sampling and whatnot, in terms of estimating those sizes.

DR. NESSLAGE: I am just trying to remember how it works in the assessment. I believe it's an age-based selectivity curve, and is that correct? Is that based off of the age comps observed in the SERFS index, or is that based on age-length translation? I was just searching the report to see if I could figure it out first, but I couldn't, and I thought you might know.

DR. REICHERT: It's observed ages in the trap, and I believe, and correct me if I'm wrong, Ted, that, in the assessment, there was a flat-topped selectivity selected in the model, correct?

DR. SWITZER: Exactly, and that actually drove a lot of this research, because that was implied. The reason there was fewer, older fish in the traps was because they weren't there, or at least that's how it was assumed, and we were seeing a lot of older, larger fish in the hook-gear survey, and that's really what stimulated this research to begin with, and so, yes, I think you're correct.

DR. NESSLAGE: Then I guess I was wondering if we could look at the age-comp data, because we're looking at the length data, since that's what would impact the assessment and the interim analysis the most, which I think is the whole point, and that's one of the reasons why we're considering it today.

DR. REICHERT: I want to remind you, if you remember from the stock assessment, the red snapper is a fish that grows really quickly, and then it levels off, and so there is a high variability in the size at age, because of that early leveling off.

DR. SWITZER: We have the age data for the three capture gears, but, again, given the variability applying an age-length key to the video data -- It can be done, but I don't know how variable that would be. We would have to look into it, but it could be done.

DR. NESSLAGE: Is this the right time then to discuss the impacts on the interim analysis? I can wait, if that --

DR. SEDBERRY: Our two action items are to review the findings and discuss the uncertainties and determine if they are best scientific information available and then discuss recommendations for including the findings in the interim analysis for red snapper that we heard about at our last meeting, and so, yes, it's appropriate.

DR. NESSLAGE: Along that point, I think this is really interesting, what you all found. I guess I'm just having a hard time figuring out how we would translate that in the interim analysis, because it's not set up as a length-based selectivity curve, and I wish Katie were here, or Erik were here, and maybe someone who knows the assessment in more detail than I do, but it would be really good to understand how that might actually be incorporated into the interim analysis, because I don't think it's set up to deal with it that way at the moment, but I could be wrong.

DR. ERRIGO: Erik, I just unmuted you. Can you hear us? I don't hear you, if you're talking.

DR. WILLIAMS: Okay. Somebody will have to refresh me of what was the question.

DR. SEDBERRY: Genny had the question.

DR. NESSLAGE: Hi, Erik. We miss you here. I guess what I'm curious about is the fact that we're looking at the potential impacts on length-based selectivity, but it's my understanding, and correct me if I'm wrong, that the assessment incorporates an age-based selectivity curve, and I'm wondering how the interim analysis could handle this difference, because the differences aren't showing up in the ages and they're only showing up in the lengths, because of the nature of --

DR. WILLIAMS: Currently, the model is configured to just use the ages only and not the length data at all, and so we just basically feed directly the age comp data in as a distribution, and we don't do anything with the length. We could possibly revisit that, but that would be a fair deviation from what we've done.

DR. REICHERT: Erik, I am trying to think, because of the fast growth early in life and then the leveling off, how this could be incorporated.

DR. WILLIAMS: Yes, it's going to be tricky, because this study doesn't exactly provide a direct selectivity curve itself. What it provides is evidence that there is some difference in selectivity between video and hook-and-line gear and trap gear. The question then is how do you translate that into a selectivity curve that's age-based, and that's where it gets tricky.

The one thing I would note is that it's important to not just focus on relative percentages of the older fish, but also relative percentages of the younger fish, and so, in other words, you can have what looks like dome-shaped selectivity and curve with two gears that are flat topped, but just one is shifted to younger, smaller fish, and so you have to be careful to account for that factor as well, that there could just be a shift to younger or smaller fish, which would give that perception, and so, really, when you look at the selectivity analysis, you've got to look at it across the whole size spectrum or age spectrum.

DR. SEDBERRY: Does the SSC have any additional questions or comments? Have we addressed the two action items?

DR. REICHERT: I've got a question. So this is all concentrated on the red snapper and the red snapper analysis, and so a question. Is the task, or is the action, relative to the total report, or is our review relative to the red snapper part of the report? That's a question I have, and I'm not sure who --

DR. ERRIGO: It depends on how you want to use it. The idea was, at the last meeting, that we would use this to inform the interim analysis for red snapper. Therefore, you could focus in on red snapper if you want to use it more generally, you could comment on the general utility of the study.

DR. REICHERT: I don't disagree with that, but the first action says nothing about red snapper, is what I'm saying, and so, if we feel comfortable just to the red snapper, then that's fine. If it is more the general report, I think there's a lot more in the report than just red snapper.

DR. SEDBERRY: I think there's nothing that limits us from addressing other things that are in the report, but we do need to address the interim analysis for red snapper, for sure. Let's do that first. Let's come up with some recommendations for including these findings in the interim analysis and then determine if this is best scientific information available for red snapper for that interim analysis, and then, any other species or anything else that's in the report, we can address after we get that out of the way, I think.

MS. LANGE: I think, based on what Erik's comments were, I'm not sure that this is really useful right now for the interim analysis. It doesn't show the full selectivity curve. It's a subset just showing that there is some larger fish that aren't being caught, and so I don't know exactly how it could actually be entered in as actual data, and, again, the interim analysis, I thought -- I mean, I don't know how much leeway we have to go into further analysis of the data. It's not by age. It's by size. Obviously, it gives a clear signal that there may be larger fish that could be taken, but I don't know how we could actually apply it or how Erik and his group could actually apply it in the assessment.

I mean, I certainly believe this merits more use and study and expanded sample size and greater areas that cover more of the territory where the stocks are, and other species as well, along with the red snapper, but I'm not quite sure how -- Again, based also on Erik's comments of how this would actually be folded into what was, in my understanding, not an update, but an interim analysis of basically what was available, and I don't know how that could be done.

DR. SEDBERRY: Yes, I agree with you. I'm not sure how it can be done. The thing that just jumps right out at you though is that we're using a flat-topped selectivity now, and it's not flat-topped for the trap index, at least.

DR. SWITZER: Again, there are methods to take the video size data and convert it to age data. In the Gulf, we do it for red snapper pretty frequently. Again, there is going to be some variability at size, based on the fact that a certain size might indicate three to five-year-old fish, and you have to proportionally allocate those based on the observed age data, and it's possible that you could convert the video data to estimated ages.

DR. SHAROV: I would think that the recommendation should be that we should recommend that this study would be analyzed, taken into consideration, and the assessment team would take a look at if it is possible to actually estimate age-specific selectivity curves or not, particularly in the interim, as an interim analysis, and, theoretically, I could think of how, in a simplistic form, you could try to do this.

You could look at a ratio of the frequency at size, camera-based versus the trap versus the particular hook treatment, and so you could simplify and make certain assumptions and estimate one sort of single smooth selectivity curve based on all observations. Then you could convert it into the age-specific, assuming just using the average growth curve or apply then certain age frequencies, but there is a lot to think of as to how this could be done and whether this would be possible, perhaps, to do in practical terms within the timeframe that's available for this.

I think that there is a way of doing it, and whether the people that will be doing this will have enough time to actually address this, I'm not sure, and so the recommendation should be probably to attempt, if possible, to absorb this new information. It would be difficult to ignore it.

DR. WILLIAMS: Just to add to the discussion, recognize that the index that we're using is a video and trap combined index, and so the selectivity we're applying is to that combined video and trap index. Now, we do also feed in the age composition data from the traps, and so that's the part that would certainly be affected if we changed selectivity, but here's another thing to consider, is that, when we separate the video and trap indices for red snapper, they are nearly identical, which would suggest that whatever dome-shaped selectivity might be occurring is probably fairly slightly, because, otherwise, we would see bigger differences in the indices.

DR. SEDBERRY: Thank you, Erik.

DR. SERCHUK: I am getting concerned that we're not providing appropriate information with respect to our action items. We had a long discussion in May, and we basically said the report hasn't been peer reviewed, and we just got it, and we don't know whether it's the best scientific information, and so we're going to ignore it. That's essentially what we said, or bring it back when we have the report. Read the minutes. Basically, we did not decide it was best available information, and it had no peer review at the time, and so we decided really not to act on it, and we didn't have enough time in May to go through it. We may not even have had the report at that time, or at least not the report in its current fashion.

My feeling is that the report suggested selectivity of the chevron traps may not be flat-topped. First thing, do we agree with it or don't agree with the flat-topped issue, and that's one issue, quite

frankly, and that's what a peer review does. A peer review takes the report and said, okay, what methods are right, and did this study get conducted in the proper way, and are the conclusions consistent with the results, and I would like to be as specific as possible in answering that question.

Then we can decide yes or no or yes, but it doesn't make a difference, or, yes, it shouldn't be included in the interim analysis and it should be taken to the next time the assessment is done in 2020. I think there are too many things that are hanging out here that require our input, and I have heard differences on all sides around the table.

Some said, well, we can't incorporate it into the assessment, which means that, okay, if we can't incorporate it into the assessment, can we say anything about the interim analysis and the potential impacts on how the interim analysis might be modified if selectivity is not flat-topped, but dome-shaped, and what would the likely effect be? Would it be small, as Erik indicates, or do we really know?

I am seeing too much uncertainty here in respect to the sort of potential responses we've had to both of these action items, and, if we can't say more, let's say we can't say more, but I am concerned that if we think the study shows some likelihood, but requires more work, that we be very specific about what issues need to have more work or need to be analyzed further, particularly with respect to the research track assessment that will be done in 2020.

Maybe nothing can be done with the interim analysis, and maybe we can't provide any information on that, but I am thinking, the more specific we can be on each one of these action items, particularly when the idea was bring it to the SSC for peer review, because it hasn't really had a peer review, in May, and now we are the peer reviewers, and I think we have to live up to our responsibilities to be as specific and to be as helpful as possible, and I know I've put a lot of generalities here, but it's only because I see bits and pieces being provided by different members of the SSC in their comments. Thank you.

DR. BELCHER: I am just going to kind of go out on a limb with it too, because I think the hardest part with this is the age uncertainty. We're back to this issue of age uncertainty, and we have incorporated surveys that are being done that are actually giving us measures of length and that are giving us a little bit more certainty on what's going on with the length, yet we continue to delve more into that area of the age. Why not talk about whether or not we would be better served to look at a length-based assessment?

If your certainty is higher with the lengths -- I mean, they're measured fish, and we can't always -- We can measure a fish and throw it back and at least know with some certainty what the size of that fish was, but we have no idea what the age of that fish is, regardless of where we are with it, but yet, if we have more surveys like Ted's that are being done, where you're getting good measures of size, why would you not think to use the length? There is less uncertainty.

DR. SHAROV: I think as long as we're using the cohort-based methods, which the statistical catch at age models are, yes, we could use the length information, but it still will have to be then linked to the age, because, the way you model, you still model cohorts, whether you follow individual size groups and distributions, but you can't get away from, at some point, converting this into the age, but, in this case, I agree with -- Well, I would certainly think that there is a possibility to develop a length-based selectivity and, in general, the process is -- Both the

interaction of the stock and the fishery as well as biological interaction are, in the end, size-based. They are not age-based. These are all size-based processes.

DR. REICHERT: I mean, I think we're still in the middle of that discussion about the uncertainties and how potentially this study could be informative to, in particular, the next interim analysis, and so I think, in terms of uncertainties, and some of them are laid out in the report, in the catchability of the trap, the location, the fact that we have more length than age data, and so, in terms of recommendations, I think it would be good to see if we -- Well, if we are using a length-based assessment, then that's not necessary.

I would argue that it would be good to continue this and get more age information, so we can actually look at that age-based selectivity and see if there's a potential to expand this so that we can look at the entire region rather than Florida only, and then I think -- That's one of the points that I was going to bring up later. One of the points that Erik brought up was the fact that, in the current assessment, it's the combined video-chevron trap index, and I think that may be something that we need to discuss a little.

If there is indeed a dome-shaped selectivity for the chevron trap, and if the video index is assumed to be flat-topped, then we have two different -- Can we then continue to combine these two, and then what do we do in terms of the age composition for both, because we have, I would argue, a good age composition in the traps, but then what do we do with the video, because obviously we will never get an age composition of any video data that we will have in the future, and so I think that's something.

The other thing is we have recognized that the traps and the video -- Since the videos are on the traps, they are not two independent gears, and so then can we separate -- Can we treat them as two separate, and that may be a discussion for a later time, but I think these are all considerations that we probably should keep in the back of our minds once we start making recommendations, in terms of usefulness for an interim analysis, and then, also, what do we recommend in terms of to investigate this further if we feel that the uncertainties are perhaps too large to make clear recommendations right now on the use of the analysis?

DR. CROSSON: A question for staff. The ABC recommendations that we made at our last meeting, didn't we make them for two years, 2019 and 2020? Is that correct? While you're pondering that, with these mini-seasons that have occurred, weren't the states out there collecting otoliths or something like that? What happened with that data? Is that being analyzed somewhere? I guess I'm really starting to jump away from this question about the traps, and maybe I should just back off of that one. I thought they were out there collecting otoliths from anglers, and I'm not sure of the commercial sector as well.

DR. SEDBERRY: They collected racks, through the freezer program, and so they have lengths, otoliths, and gonad samples, potentially, from all of those fish. Also, don't you all have age data for all the red snapper that were removed in the FWCC study?

DR. SWITZER: Fish that were caught in the traps or by hook-and-line, you have otoliths from all of those fish too that could be applied to those fish, of course, but also maybe things that were seen on the video.

DR. CHRISTIANSEN: Yes, we have the ages from the captured fish.

DR. SEDBERRY: So we can come up with ages that could be applied to those lengths from the video if we want to, but we are moving more towards video assessment, and we may just want to rely on the lengths, aren't we?

MS. LANGE: Just to sort of put things in perspective, my understanding was the interim analysis was chosen to do an interim analysis, to do something very quickly, with the intent that, a year from now, we're going to be doing -- There is going to be a full-fledged assessment or a complete re-do or benchmark or I'm not sure what -- Can we sort of go over what the plans are?

I guess, if this is just something in for a year, and while the study is useful and informative and potentially demonstrates a very useful method to get information relative to selectivity, I don't believe it's there yet, as far as like the sample size and the distribution of where the samples occurred relative to the stock, and is this something that can be worked on more? Like the ages and try to figure out to convert the lengths that were viewed to ages or something to get closer to being actually useful for the assessment, and is that going to be like -- If it's going to be done next year, and the interim analysis is for this year, I mean, I would feel better knowing that everything was worked out from the study, so that it was applicable to the assessment. I mean, I may be twisting things around here, but --

DR. SEDBERRY: So even if this was applicable to the interim assessment and we can find a way to do that, why don't we just wait until the next regularly-scheduled assessment? Is that --

MS. LANGE: Well, I guess that's my question. If they're looking to get the interim assessment done now, from what Erik said, with the video and -- The chevron traps do have video, and the distributions are very similar, and so there is not, in his mind -- Excuse me, Erik, if I'm overstating this, but his impression was that, if there is a dome-shaped curve that it's only very slight, based on his years of doing these analyses for this stock.

Now, that may be -- Again, I don't know that we can make a firm decision based on the study that's been presented to us to change that, and, if this assessment -- If the interim analysis is supposed to be for this year, and we're going to be doing a full-fledged assessment next year, do we just want to wait and not do an interim assessment and then just wait until this information is fully -- The study is fully addressed.

DR. SEDBERRY: Thank you.

DR. ERRIGO: Your ABC recommendation was for the interim analysis results to be in place until 2021. Red snapper is not scheduled to be assessed until a little later, and so it was supposed to be through 2021, and then we were supposed to get results from an assessment on red snapper.

DR. CROSSON: It's 2020, right? Isn't that what I saw up on the board earlier? It said the assessment happens throughout 2020, and then when does the SSC hopefully get the report for that SEDAR?

DR. SEDBERRY: Julia can answer this.

MS. BYRD: A lot of the assessments got delayed to make sure that the fully-calibrated MRIP data were included, and so there hasn't been much discussion yet on the red snapper assessment. It was scheduled for 2020. If it starts in 2020, it would likely be very late in the year, and it will depend on what that assessment looks like. If it goes through a research track, that will probably be a lengthier time before it gets to you. If it goes through an operational, I expect that it will be more similar to a standard than an update, and so that will probably take some time, and so I guess we can't give you an exact timeline of when you would get that assessment at this point, but it will probably be a few years.

DR. SEDBERRY: Thank you, and, to me, this looks like it would be a research track, with new data and new indices available.

DR. CROSSON: That answers my question, but I just wanted to -- I will let other people talk here.

DR. SERCHUK: Just one point, Chair. It's my understanding that, from a research track perspective, there is no advice coming out in terms of assessment results, and so, if you're talking about -- It's completely a technical exercise on methods and assumptions that have gone into previous ones, and so, if we're looking for an activity that will result in management advice, it can't come out of a research track, because they don't provide that.

I want to remind people that one of the reasons that the research track was set up was it was going to be a purely technical and methodological exercise, unencumbered by a time schedule for management, but whatever came out of it would then have to either have another assessment or another activity that would provide that, and so, again, comparing what the previous assessment did, in terms of its management implications and when we're going to do another research track, they don't fold into each other one-to-one, because the research track will not provide a recommendation to managers from those analyses. Something else will have to be done in addition to the research track. Thank you.

DR. NESSLAGE: A question and a comment. The question is was there not a working group to look into combining the trap and the video index way back when that was separate from the assessment? Am I remembering that correctly? I am seeing heads nod, but --

DR. ERRIGO: There was a working group to look at standardizing the video index, and it was during one of the assessments that they proposed the methodology, the Conn Method, for combining trap and video. It wasn't a separate working group separate from an assessment. I think it happened during an assessment, and I can't remember which one it was, and then they settled on the Conn Method as the way of doing that.

DR. NESSLAGE: The comment was I was hoping that might help, but it wasn't a separate working group. I was going to say there's a lot of work that would need to go into taking this study, which is very interesting and nicely done, and turning it into a new selectivity curve for either the combined index or separate indices, however the group moves forward, and, if it does end up being the best option, being a length-based selectivity curve, that means a major change in the assessment structure.

I think this is a good avenue that we should be going down, but I would be very hesitant to throw this into the interim analysis. The whole point of the interim analysis was just to update the survey

data, and so I guess I think it's a bit -- I don't think we should ignore it, and I agree with Alexei, but I don't think it's really appropriate for the interim at this point. A lot more work needs to go into it before it's ready for primetime and the model, but I think it's good work to do.

DR. SEDBERRY: Thank you. I agree with that. Marcel, did you have something?

DR. REICHERT: Well, then I think would our recommendation be to investigate that or -- You know, I mentioned earlier that an alternative is to collect more age data, so we have that age-based selectivity, and that does not address the fact that we have one index that consists of two gears that are not independent, and so, as Fred said earlier, if you're talking about a study to address that particular point, then that gets pretty complicated.

DR. SERCHUK: Would it be appropriate to say something like this? There are indications from the study that selectivity is not flat-topped. However, the magnitude of the deviance from a flat-topped to a dome-shaped has great uncertainty and is unknown, and, therefore, its impact on the abundance on the older portion of the stock cannot be parameterized, something like that, because the fact is, if there is something about not being flat-topped, that means we're not 100 percent sampling the larger fish.

I am not thinking about ages now, but the larger fish, and so there is a perception out there, I believe, that, wait a second, you guys are underestimating the larger portion of the red snapper stock, the larger fish, but there is a perception, and okay, and that may be true, but all we can say is, yes, the study does look like it's not flat-topped, and it may be a dome shape. However, how much of that -- What the dome looks like, we have no idea at this point in time, and, therefore, we can give you a direction, but we can't tell you the magnitude of the change. Therefore, we have to leave the interim analysis just as it is, and that's what I'm hearing around the table.

DR. SWITZER: It was more towards your comment of depending on if you can reasonably make the assumption that age at size hasn't changed over the last several years, and we probably have several thousand ages from both the standardized FWC hook gear survey and the trap survey, and so there is enough age data, potentially, to delve into that a little more without collecting any more data.

DR. REICHERT: Fred, I like that a lot. However, I would add to that to then -- If that's an assumption, and if that is something that we want to have investigated further, that, at the same time, we should look at the fact that we now only have a combined video chevron trap index, and that if indeed the selectivity of the chevron index is not the same as that of the video index, then that is something that should be investigated or addressed, because that is -- Correct me if I'm wrong, but that becomes an important issue, or maybe the degree of doming may not be significant enough to justify a different index.

DR. SEDBERRY: The way Mike has written that, it's considering them as two different indices, but there is the combined index as well. Are you saying that the selectivity of the traps is different from the combined index?

DR. REICHERT: No. What I'm saying is, if indeed the selectivity of the chevron trap is different than the selectivity of the video, then that violates an assumption that we have used to combine the two, because we are borrowing the length and age composition from the chevron trap for the

combined index. If the selectivities are different, then we cannot do that, and I'm not sure how that can be addressed, and I'm not sure if Erik can speak to that point, or someone else, but I think that's -- For me, that would be the next step, in terms of how are we going to approach this.

DR. SEDBERRY: Does Erik have his hand raised, by any chance? One thing for certain is that we have a lot of uncertainties.

DR. LI: Just a little comment or idea. Because there is a lot of uncertainty there that we don't know, is it possible to have a sensitivity analysis and like we try out different dome-shaped versus flat-topped selectivity throughout in the model to see the outcomes and how the model -- If the model is robust to this assumption, it will come up in that we have the same management recommendation, and that's the point for the stock assessment, and then it might not.

I won't say it's not a problem. It is still a problem, but, for the interim analysis, it does not bother me for now, and then, when they collect more data, we can move on to correct that, if it's very sensitive, if this assumption is very, very sensitive and like one is overfished when it's not, and then we need to really put out some effort to figure that out somehow.

DR. NESSLAGE: A separate point is, if folks are really concerned about the selectivity of the chevron trap index -- I mean, as Erik indicated, they were calculated separately, during the data workshop at least, and there is a plot, Figure 1, and, anyway, they have been separated, but it's just that the ultimate one that was used in the final base run was the combined, correct? I am seeing heads nod, and so, if people are really concerned about the selectivity of the chevron trap portion, can we just go back in the interim analysis to using the video only?

DR. ERRIGO: What they did was they did have two separated indices with two separate selectivities, but the age comps for the chevron trap and the video index both came from the chevron trap, and so, if you assume flat-topped selectivity and all your age comps come from the chevron traps and it's not flat-topped, that means your assumption is all the older ages that are not in the trap are simply not in the population, and that's where the issue comes up.

DR. SEDBERRY: I would like to suggest that we take a ten-minute break here, and, while we're breaking, have a cookie and get some caffeine, and then we'll come back with some suggestions on how to move forward from this, and so let's take a break and come back at five after.

(Whereupon, a recess was taken.)

DR. ERRIGO: Okay, and so Erik had a comment, which what he was saying is that we can't just change the interim analysis, like the selectivities and things like that, because it's an extension of the benchmark stock assessment, and so, if you want to fold in new selectivities or a splitting of the indices or anything like that, it requires going back and changing the original benchmark assessment in order to get outputs from that and then running the interim analysis from that, and so it's not as simple as just the selectivity is different and so we just put the new selectivity in the interim analysis. It doesn't quite work that way.

DR. SEDBERRY: Thank you, Erik, and thanks, Mike. I think that's the point that Fred and Marcel and others were trying to make too, and so now where are we?

DR. REICHERT: Mike, can you scroll up a little bit, because I think the first action item was looking at some of the uncertainties, and so I want to make sure that we capture what we discussed.

DR. BELCHER: For a potential point of clarification, where it says "doesn't quite give selectivity curves", shouldn't that be relative to the age selectivity?

DR. ERRIGO: Someone, and it might have been Erik, said that what it gives is the probability at size of capturing -- Probability of capturing a fish at certain sizes, but it doesn't actually give selectivity curves, or something like that.

DR. REICHERT: Also, and correct me if I'm wrong, but it's a relative -- It's relativity, because it compares the various gear with each other.

DR. ERRIGO: That's what it was.

DR. REICHERT: It uses the video as a -- It assumes that the video provides an accurate estimation of the population. Correct, Ted?

DR. CHRISTIANSEN: It is relative, because we're assuming that the stereo-BRUV was unbiased, or non-selective, and so it's because it's comparing between the gears, and that's what he means by the selectivity curve.

DR. REICHERT: One of the other things, and it's actually in the -- It was listed in the report, and we discussed it a little bit, is that there were some questions as to the catchability of the trap relative to the trap that they used in the SERFS survey because of the video, and I think you addressed it.

DR. SWITZER: It's a little bit bigger. I don't know that it would have a lot of impact.

DR. SERCHUK: I think it's appropriate to look at these two action items one-by-one, to be sure that we cover all the bases, but our comments are -- I don't particularly like the comment that this is the largest uncertainty with the study and red snapper in general. The study wasn't undertaken to look at age selectivity. It was a size selectivity study, and so we can't castigate the study for an objective that it wasn't set up to do.

Again, I just want to be clear to the authors that it has to do with the use of the study with respect to how the interim assessment was done, and I want to make that very clear here. I think the authors did a good job with their size selectivity study, and it's not an uncertainty with the study, per se. It's a different type of issue. Thank you.

DR. SEDBERRY: Excellent point. Thanks. Mike, somehow we need to transfer, I think, Erik's comment that he submitted into those notes. In addition to addressing the uncertainties in that first action item, we also need to determine if it is the best scientific information available, and, really, all that we've discussed so far has been this study in relation to red snapper, and that's our main concern here, is the red snapper and the interim analysis that was done for red snapper, and so we don't need to address whether it's the best scientific information available for the other species that were included in the report, or at least not right now. Right now, we're just talking about red snapper.

DR. BELCHER: My first comment was to -- I think that the statement that Fred made about there is evidence for the study that the selectivity curve is not flat-topped, to kind of finish out this group with that statement, because I think it gives us a good segue into the second part, but I kind of hesitate to say anything about best scientific information for this. I mean, that's like basically saying to Ted whether or not I think you should -- That I don't think it's the best scientific information available and so don't publish it.

I mean, I don't see what our endorsement on this at this point would do. It's just whether or not we feel it's incorporable and we should consider it in the future and conditional work to pass on to them as to we would like to see potential -- When we come around to the benchmark or the research or whatever it is, if you could add into this, and this is something we would like to see continued on, but I don't think that endorsement is something that I would feel comfortable putting forward.

DR. SEDBERRY: Good point.

DR. CROSSON: To that effect, I would guess that -- I also thought it was odd that we had that request in there about best scientific information, because, right now, based off of the discussion we have, it seems that we have agreed that the best scientific information right now is still the interim report that we approved last time and that our current ABC recommendations are the ones that we would stick with at the moment and we don't see a reason to change those.

DR. SEDBERRY: I agree with that.

DR. CROSSON: Okay. Let's make sure that's incorporated in as well.

DR. SEDBERRY: Really, the best scientific information available question is in there because that's what we do, but, if we can't do it, or if we shouldn't do it, then --

DR. CROSSON: It seems to me that it has a very specific application, because, when we're asked that question, that has implications for fisheries management under Magnuson, and so, when we are talking about best scientific information, we are specifically talking about in terms of current management and our recommendations and how they fit into that process, and so that's why I wanted to make sure that I clarified that.

DR. SEDBERRY: Okay.

DR. BELCHER: To that point, we don't put BSIA on every white paper that goes through a stock assessment either.

DR. SEDBERRY: You're right. I was generalizing there.

DR. SERCHUK: I have a different opinion, and it's because I see that, if you're familiar with the Mid-Atlantic Council SSC, they have this best scientific information on every assessment that they do. My point is I do think it's the best scientific information available, and I don't think it's ready for primetime to go into management, and that's a different issue.

I think we did a peer review, and they were looking for a peer review, and that's the responsibility of the SSC to do peer reviews, and I think people here have done their homework, and I think we've come up with a lot of good evaluations of what's been done, and I have no problem saying that we think this report represents the best scientific information available. What we don't see is the information in the report, even though it is the best science, ready to be incorporated into management actions, because of some of the issues we talked about, the age selectivity and size selectivity and so on and so forth, and I want to be fair about this. This is a peer review forum. Thank you.

DR. SEDBERRY: Thank you.

DR. NESSLAGE: When you say something is best scientific information available, for what? To piggyback on Scott's and Carolyn's comments, it's not for the interim analysis at this point. It might be for further exploring and modifying selectivity curves for the SERFS index in the assessment, and I would be happy saying that, but I'm not willing to just give it a blanket BSIA.

DR. CROSSON: When I peer review an article, I don't say this is now the best scientific information available, especially if they cited me, because I know that mine was, but I look at it and I say is the methodology in line with the hypothesis and are their conclusions in line with the methodology and the data, and then it's, yes, this is valid science, but it's also just part of the big picture, and so I don't want to get anywhere near applying that label to anything that's not specific to what we have to do under Magnuson.

DR. REICHERT: Then I agree with that, but then, perhaps, should we add some language that we reviewed this and we considered this a well-designed and well-executed study with valid analyses and then refer to the uncertainties and how we feel this study should or should not be used in the interim and then subsequently in further analyses or further stock assessments?

DR. SEDBERRY: That sounds like a good plan.

DR. BELCHER: I support that, but I think that we should also either draft a memo letter to that effect, so that Ted has information coming to him as to what the SSC has had for guidance, so that, again, if he wants to bring that information or Heather bring that information forward at the next stock assessment, they kind of have an idea, going forward, of what we would like to see come further past that.

DR. SEDBERRY: Okay.

MS. LANGE: I agree, except for one part of the phrase. When you said "for use in the interim analysis", I thought we decided that it wasn't ready to be used in the interim analysis.

DR. SEDBERRY: Well, we didn't really decide that. That was Erik's suggestion, and we hadn't really discussed his suggestion.

MS. LANGE: Okay. Sorry.

DR. LI: I am just trying to wrap my arms around what we just discussed. For this study, if its target is to be used in the interim analysis, then what question is this study trying to address? Like,

first thing, is this study trying to determine, help determine, shall we use flat-topped selectivity versus the dome-shaped selectivity, and the answer is no, right, and it's not because it's relative, wherever you show the curve is relative to the video, and so we don't actually know what is the better selectivity, more accurate selectivity, because they're relative to the video outcomes.

Then the second question is, is this study trying to address the question that shall we use a combined, the trap and video combined, and that was a separate -- No? I see shaking heads, but is that study trying to address that question of should we use the separate or shall we assume -- I don't know what is this decision that using the combined index this decision is based off.

If we assume -- Because we assume they both have the same selectivity. Therefore, we combine those two indices. If so, then, from this study, we can see that it's not the same selectivity curve, because, from relative selectivity, it should be level, one line, but it's not. In the figure with the three together, this is a different shape. It's dome-shaped or whatever shape, and so, from this study, we can see trap and video, and they are not the same selectivity curve, and so, if this study target is for this purpose, then it missed the purpose, and the combined index is not appropriate, because the selectivity is not the same.

DR. SHAROV: I hear this, and I agree, but I also would like to know that -- Well, what the detail of the presentation says is that this is the direct assessment of size selectivity of hook-and-line gear, chevron traps, and underwater cameras, and so it is a -- One of the rare occasions that it is a field experiment where you are trying to actually estimate it in the field rather than within the model, and you are trying to get direct estimates of specific gear selectivities, which always is very hard to come by.

The problem with us, stock assessment scientists, is that, when there is very little data, we very easily agree on assumptions and make very many assumptions, very bad ones, and we keep going forward, and everyone is happy. The more we have the data, the more we talk about the uncertainty and how high that is and difficult it is and how not ready we are for this, and so I think the decision on using traps and videos was made during the benchmark assessment.

At that time, that was the best information available, and there were video-based counts, and there were chevron traps, and the video was on top of chevron traps, and so the assumption, quite logical, was they are describing the same process and they are looking at the same fish, and so they most likely were pretty confident that these are similar estimates, and there is some error included, which is accounted for in the calculation of index, per se. Therefore, these are the closest possible ways of estimating relative index of abundance, and, therefore, we're combining them into a single one, and it doesn't make sense to have, in the model, two different indices, which were measured in the very points of time and space and have the same similarities. For that reason, the decision was made to combine them.

Now we have a field study that tells us, well, we actually have, most likely, a dome-shaped selectivity, which now also seems to make sense. The larger fish are not as eager to get into the trap, et cetera, et cetera, and I think, with respect to the size selectivity of these gears, we probably have the best available scientific confirmation at the moment, although it's not as crystalized yet in the form of selectivity curves as we would like to have it.

The question is whether this, the calculation of size-specific curves and the conversion of them to age-specific, could and should be done during the interim assessment, and that's what we're trying to figure out. I personally -- That's why I said initially that we maybe should recommend to consider if this is possible, but that's up, essentially, to the assessment team to decide whether it is possible, given the quality of the data and if it's possible that they would do it. If it's not, for a number of reasons, then that should be then redirected towards the next benchmark or another time when the full-scale assessment would be done.

DR. SERCHUK: I agree with the comments of my colleague here. Sometimes I feel that we're like Pogo. We have met the enemy, and it's us. To get back to this BSIA thing, I direct your attention to page 8 of our overview document, which is on the review of the Florida study, and particularly to the second paragraph. Why did we encumber ourselves with this best scientific information available wording?

Well, it seems that we said that the results of the study weren't available at the time to either the workgroup and the analytical team. Also, this study has not been peer reviewed, and the committee was unable to deem the FWCC study as best scientific information available at that time, and so we've already set ourselves up to say that we were capable of doing it, but we didn't have the report, and it wasn't presented to the group, but it said that it's a responsibility that we have.

Maybe we didn't clarify what BSIA means in the context of being appropriate for management purposes, but clearly, because we couldn't deem the study as the best scientific information available at the time, because it hadn't been reviewed, now that it's brought to us for a peer review, we either have to say that, well, wait a second, we think the study that was done was done in an appropriate fashion and the methodologies were okay and so on and so forth, but, to the extent that we believe that BSIA means it has relevance right now to be incorporated into management system, clearly this problem with how do you incorporate length data into an age-based assessment is problematic. I think we need to have some indication here of why we can't -- If we don't say it's best scientific information available, we either have to make our definition crystal clear of what that means or why we can't do it in any case.

DR. SEDBERRY: Thank you, Fred.

DR. NESSLAGE: I think it would really help limit our discussion if we looked at Erik's comment as a group, because I think it would address Alexei's -- If that's allowed, because I think it would address some of these concerns. Just a point of clarification, and Scott and I, I think, are the only ones here who are on the working group, but we didn't have this in our hands when we were working on that, and so we couldn't have even called it -- I don't know who wrote this, but we couldn't have called it BSIA, because we didn't even know it existed until we got to like a week or two before, and it was in the briefing book, and we were like --

DR. SEDBERRY: If we look at Erik's comment and we agree with it, then there is no further discussion of the interim analysis, as it applies to this. We could say it's best scientific information available to address the objectives of the study, which are listed on the first or second slide, and just kind of in terms of that perspective, but, in terms of the interim analysis, maybe we can't do anything right now.

DR. SERCHUK: We are clear in our report that the workgroup did not have a study, and that's very clear in the first sentence. However, the results of the study were not available to the red snapper ABC workgroup and the analytical team at the time of conducting the IA. That's the first sentence in the second paragraph on page 8 of the overview document. I am not saying you had the document. You didn't have the document, but it goes on to say that, also, this study has not been peer reviewed and the committee -- You're not following me? Do you have the overview document?

DR. NESSLAGE: It's incorrect, I think. That's my problem with it. It's an incorrect characterization of what went on in that working group, and the two people who were on it here can tell you that it's wrong, and so stop using it as the benchmark for what is actually going on.

DR. SERCHUK: You should have brought it up when we first got to this thing, because, quite frankly, I wasn't part of the workgroup. How do I know that?

DR. BELCHER: I think part of the problem -- This is where we got into the language stuff, and I think we really need to figure out some of the language that's in here, because this isn't -- Necessarily, this is more of a synopsis thing. It's a paraphrase of what we've discussed, and so, in reading this, what I am reading is the committee is us and not the working group.

DR. ERRIGO: That is correct.

DR. BELCHER: So that's where it says that the study had not been peer reviewed, and the committee wasn't able to deem the FWCC study as BSIA at that time, and this is where I think there is a paraphrase in there, because I don't ever remember us getting these charges for BSIA. We have been asked to review things and asked to talk about the uncertainties and give thumbs-up and thumbs-down, kind of inferentially, but we've never had to, with all the other studies that have come before us, we have never endorsed them as BSIA.

I mean, the stuff that comes out of SERO, when have we stamped Nick's stuff as BSIA? We have given input back and what we think it's doing and where it's going, but we have never, ever, that I remember, put BSIA stamps on those, and so, if we've loosely endorsed it, that's one thing, but to come back with that stamp is kind of -- Again, my confusion is, if we stamp this as BSIA, or we choose not to stamp it as BSIA, what does that mean in the grand scheme of what Ted is doing?

Ted is still going to go through, and he's going to publish his study, and the study is fine as it is, and I don't see any problem with the study. The question is can we integrate it at this point, and this is me paraphrasing myself, and the answer is no. It can't be easily adapted into the assessment, in terms of the interim. The interim is basically the benchmark is locked, and what can we do after the fact to run through the IA to use this information, and we can't do anything with it, and so, to me, at that point, does it matter? Is the BSIA going to stop Ted from going forward with it? No.

What it's going to do is -- We're saying we agree with what's in this study, and there is good information, and it calls into question an assumption we have with this indices merge, and so, when we get to the next stage of the assessment, bring this information forward, and this is the things that we see that we need to add to it for it to be useful for us at the point that it goes into the data review workshop.

DR. SEDBERRY: That, to me, is an excellent summary. We can capture that in the notes.

DR. ERRIGO: One of the charges of the SSC is to review things and deem them BSIA or not, and I have written in the overview many times if something is BSIA or not, and my analysis -- The first time you went over it, I asked you if it was BSIA, and, again, it's coming up, and that's one of the charges of the SSC, because the council can only use the best scientific information available to make decisions.

If an analysis comes out for a particular amendment and it hasn't been reviewed at all, if it isn't deemed BSIA, the council can't use it to make a decision, and so that is one of the jobs of the SSC, in terms of the council. I am sorry that the paraphrasing was mistaken. "Workgroup" refers to the Red Snapper ABC Workgroup. "Committee" always refers to the SSC. The workgroup wouldn't be able to deem anything as BSIA, because it's not the full SSC. Only the full SSC can do that.

DR. SEDBERRY: Thanks, Mike, and I will just remind everyone that, at our last meeting, the SSC requested that this overview document be sent out in advance so that they could review it and comment on it and correct things such as this, or clarify things such as this, and so we had the opportunity to do that, and we got no comments back, or very few anyway, and so what is here is what is here.

MS. LANGE: I don't see any issues with the paragraph. I think the only thing that might have been worded differently is in the action item that says if they are the best scientific information available to determine selectivity or something, just to clarify what -- It's not the whole document, but it's in its application here, but I don't see a problem with it being included, with BSIA being included, other than maybe being a little more specific about what it was for.

DR. SEDBERRY: Thank you.

DR. SHAROV: I totally agree with Anne. That's exactly what I wanted to say and remind -- Genny just said, minutes ago, the best scientific information for what, and it's best scientific information specifically with respect to our knowledge on size selectivity of hook-and-line gear and chevron traps. We are not aware of any better information available at this point, period.

This is not the best scientific information for changing the assessment results or enacting a new assessment that would anticipate a significant change in the status based on this. We are not even going into that direction. It's, very specifically, just related to size selectivity, and that would answer that question.

DR. SEDBERRY: Thank you.

DR. ERRIGO: Do you guys plan to use the results of this study to justify continued work and looking into selectivity of the chevron trap and the video index, possibly looking into should they be separated or stay combined? Would this study be part of your justification? Then I suggest you deem it as BSIA for what it says and be specific about it's BSIA, and it suggests this and -- It's BSIA for this, and suggests this, and we recommend this, and just be specific about that.

DR. CROSSON: I'm sorry, but I just have one more clarification for you, Mike. You are saying that the council can't use anything until we declare BSIA for the purposes of management.

DR. ERRIGO: Yes.

DR. CROSSON: Okay. Well, for the purposes of management though, I don't consider this study alone BSIA. I can't derive any idea about the population of red snapper from looking at this study alone, and so the answer to that is no. Do I think this is something that should be included into the next stock assessment for red snapper? Yes. Absolutely. Do I think there should be continued work done in looking at the length and age and how these things are related to each other and all the issues that Marcel brought up about the overlap between the chevron trap and the camera data? I think all those things are important, and I think they should all be brought into it, but I'm not going to say that it's BSIA for the purposes of management for the council right now. I think it's good science though.

DR. SEDBERRY: Could we say it's BSIA for determining selectivity of or for evaluating selectivity of chevron traps or some --

DR. CROSSON: I wouldn't agree with that either. I would say that it's indicative that there is some issues that have be teased apart. It's part of the scientific process, and they have that out for review, it sounds like, right now, and it's another part of the peer review process and the furthering of science and everything else that goes along with it, but, by itself, it's not something that we can make any grand conclusions about. I am now dragging up National Standard 2 online and looking at this and the way that BSIA is used in National Standard 2, and what I keep getting is that its purpose is always for use in fisheries management and not for some declaration generally about the quality of science that's being put forward.

DR. SERCHUK: In my mind, BSIA doesn't mean the study is perfect. That's why it's the best scientific information available. It's not the best scientific information forever, and there are no studies that I know of, quite frankly, if you want to use that benchmark, that said, okay, this is the best scientific information available, and there is none better, and the study has no imperfections.

Every journal article has something about, yes, we've looked at this, and, at the present time, this is what we have. We wish we had further information, and these are our research recommendations. In fact, it's encouraged, when you publish, to point out any shortcomings or any additional studies that might be done, and so the word "available" becomes very important in terms of this determination of BSIA, and I don't want to downplay a study which, to my mind, at the present time, is the best one we have, as Alexei pointed out, in terms of size selectivity for these gear. I think that just sends the wrong message, quite frankly.

DR. NESSLAGE: First, I would like to say, on the record, I apologize. I was confusing the terms "workgroup" and "committee", and so, Mike, I sincerely apologize. I am sorry that I got wrapped around the axle about that, and I apologize. I was wrong.

To the point of BSIA, I very much agree with Scott. It's a very loaded term, and, if you recall the whole reason we started with the workgroup and the idea of should we use an interim analysis or should we do -- Where should we go with this, but it was because the council wanted to use, and correct me if I'm wrong, the SERFS index and the relative change over time in the SERFS index to somehow adjust the ABCs or the quotas or whatever you want to call it.

That makes me very nervous then to call this study as it stands, as wonderful as it is, BSIA, because I fear what will be done with it without our review, and I'm just going to say that on the record. I'm not going to say that it shouldn't be used to develop selectivity curves in the future. I think it should, but I'm not willing to use that phrase yet, not because I'm trying to say that it's a bad study or that it's not the best available study for doing this work in the future, but the phrase "BSIA" is so loaded that I worry where it will go, but I do hope that we can put together some wording that will very strongly make it clear to the council that, if we want to move forward with considering changes or treatment of the SERFS index, this study should be used and foremost in making those decisions.

DR. SHAROV: Just to follow-up on this, and so, if we really need to say this, we could say that this study looked at the -- It attempted to estimate size selectivity of various gears and, as such, this is currently the best scientific information available, and we recommend to continue the analysis or the work in that direction. However, it does not provide, as we noted before, direct estimates of selectivity at length and has -- Or selectivity -- And/or selectivity at age, and therefore cannot be directly incorporated in the assessment for the interim analysis, something in that form, and, overall, I think the summary that Carolyn had provided still is the best summary of our overall discussion around the table that we've had so far.

DR. SEDBERRY: Have we addressed that first action item adequately? Without saying that it's the best scientific information available, but it is an excellent study that provides extremely useful data for future stock assessments, something along those lines, and I think we have said that.

DR. REICHERT: A minor point. I still would -- As one of the first bullets, I would still say that we reviewed the red snapper portion of this report.

DR. SEDBERRY: Yes, we should have that in the record somewhere.

DR. REICHERT: I know it's a detail, but I think it's an important detail.

DR. SERCHUK: I agree that our comments have focused on red snapper, but that's not what we were asked to do. We were asked to review the Florida FWCC study, and so someone will ask -- The interested size selectivity scientists or someone else will say, well, we gave a complete report here, and I understand that you focused in on red snapper, but there were other things, and so I think we either say we have to defer that portion of it or why we didn't get to it, but the fact is that we were asked to review the report and not just part of the report.

DR. SEDBERRY: Right. We were asked to comment on it in relation to the interim analysis, which dealt with red snapper. I think it's pretty clear what our charge was, especially since our report will be interspersed into this overview document. The overview document paragraphs totally address red snapper and no other species, or nothing else about the report.

DR. SERCHUK: But might we anticipate then that, when we get to these other species that were in the report, that this report might have some useful information and so we ought to put it on our next agenda item, our next meeting's agenda item, to review those sort of things, because it may have useful information for those other species that were analyzed?

DR. BELCHER: Again, back to that idea, and, if it's overstretching, John, you can tell me, but I do think, if we structure a memo or letter or whatever to the researchers and put that guidance in there and also identify relative to those other species that are in the report, if they could put similar thought to development for -- Again, when those species come up in the assessment queue, to be thinking about them for use there.

Then it will give direction and guidance, and it's putting it on the record that we are asking them to consider that going forward, and then, that way, we've also said that we put an eye on it, and we think there's merit to it. Relative to red snapper, we've done a pretty exhaustive discussion. The other species, no, but we would like to reconsider it for those species.

DR. SEDBERRY: When the call goes out for data for data workshops for the various other species that might be addressed with this dataset, that these folks be included, yes, in the data workshop. Very good. I think we've sufficiently covered Action Item 1. Action Item 2, I think, as Erik and Genny and some others have pointed out, may be a moot point.

DR. CROSSON: What I heard was we agree with that, but in the context of a proper stock assessment, either a benchmark or whatever the new type is, the research track, something along those lines.

DR. SEDBERRY: Is everybody good with that?

MS. LANGE: I was just going to say that, when Mike finishes what he's typing, I think he could scroll up to see what we already have for Item 2.

DR. SEDBERRY: Good, and then we can see if we need to add or subtract anything from it. Let's look again at Action Item 2 and make sure we've covered that, and so that's the -- They're not really numbered, but discuss recommendations for these findings.

DR. ERRIGO: The first one was an attempt to capture Alexei's comment, but I'm not sure if I captured it all correctly.

DR. SHAROV: If I could, my comment was -- Yes, this is what I did say, but we probably shouldn't have, necessarily, this as a direct recommendation. It was just sort of an idea of how this could be tried, but I am not insisting that we provide specific recommendations to the assessment team of if they are to try to -- They are much more experienced to know how to try to incorporate this data. That was just some illustration of how an attempt could be made.

DR. REICHERT: For some reason, it seems like 1 and 3 are either the same or --

DR. SEDBERRY: One I think is focused in on age selectivity, and the other one doesn't specify what selectivity.

DR. REICHERT: No, but it basically says if the --

DR. BELCHER: It's the sub-bullet in Number 3 that is just written a little bit differently.

DR. ERRIGO: Yes, and the third one is written more as a recommendation. The first one was me taking notes, and they actually occurred with long periods of time in between the two, even though they're very close together.

DR. SEDBERRY: You mean we started repeating ourselves?

MR. CARMICHAEL: I think part of the intent of this is for you to really just say what are your recommendations for including these, and there were hints before that you maybe didn't think it was appropriate to include this in the interim analysis. I would start with that. I think the comments about what the assessment does are more general, but they don't really help me say how are we going to include this and what do we do with this study now, and that's what this should really ideally be addressing, and I think it's difficult to say things in here like if the study is correct. Given the discussion over the last hour, that seems kind of a loaded sort of statement to put in there at this point, where, really, this is saying what do we do with this?

Do we put it in the interim analysis or not? If we put it in the interim analysis, how? If we don't put it in the interim analysis, but you think it has potential, then, as Alexei said some time ago, this may be some of the best information we have on selectivity, and it's a true field study and not an assumption and what do we do with it? Do we get it into the next assessment? All of that has consequences for timing and what goes next, and I think, the more you're totally explicit here about what we do with this study, the better.

DR. REICHERT: I think this may be where, if we as a committee agree, where some of the language that Erik had earlier may come into play, and then the other thing is I think Genny and several of us have said that, if it's impossible to include this in an interim analysis, this is definitely something that should be considered in the next standard or update or research or whatever the next assessment form is going to be, and I think that's kind of what you were alluding to, John, and so I think we should borrow some of the language that Erik made, and I think there is perhaps some other recommendations, and I mentioned some, that are more specific in addressing some of the issues in the report, and that is addressing the original issue, and there is some other discussion points that can potentially be addressed in a follow-up of this study, and I can look up a couple of the things that we mentioned earlier.

DR. ERRIGO: I believe -- Is that what you meant by the comment that Erik made about changes to selectivity or combined versus separate indices can't be addressed simply in the interim analysis and that it would have to go back to the benchmark or whatever assessment the analysis was based on and make the changes there in order to propagate it through to the interim analysis?

DR. SEDBERRY: Do you still have Erik's comment? Maybe just bring it up and copy it and paste it here, and we can just edit it to make sure we've got it.

DR. ERRIGO: This is what he meant. If you want to look at changes in selectivity or possibly breaking up the combined index, you can't simply do that in the interim analysis. You must go back to the benchmark that the interim analysis is based on, and the changes have to be made there and the benchmark re-run, and then that can then be propagated through to the interim analysis.

DR. SERCHUK: I don't disagree with what's been said, but it begs the question, when you have new information that may change the outcome of an assessment, is that information by itself to

say that we're not going to wait for a benchmark and we're going to do a standard assessment next week and see if we can use that information, and so I know that we have a problem, because we have an age-based assessment versus length-based results, and that seems to be a hurdle, and I also wanted to point out that I'm not particularly -- I think this Item 2 should be short and sweet.

I think there are too many caveats in this section, and it's redundant. I don't like the words "if the selectivity of the chevron traps is indeed different from the selectivity of the video data". Quite clearly, that's the message that's coming through and not if. We have made a statement before that that shows that the study results show that there is a difference, and so my feeling is that our results for this section should start with changes to selectivity of these cannot be simply incorporated into the assessment.

That's where this section ought to begin. Any other caveats to the data ought to go up into Section 1, Term of Reference 1, but I think we've already said that one about the selectivity, and I don't think we should question the study. We do think that we see selectivity changes here, size differences, between the sampling gear.

MR. CARMICHAEL: It sounds like you think this should be incorporated. If you believe it should be, the challenge is the interim analysis is not really the right tool to do that. It needs to be run through the assessment proper. The next assessment is scheduled to be a benchmark, which would actually be called a research track in the future, and do we need to do a research track for the next red snapper or can we do a standard that certainly has consequences for the timing of it.

A standard done sooner might be better than a research track done later. This is something we could consider, incorporating this through a standard. The big question, when we get to that, is is this something that you guys are comfortable peer reviewing? I think we can maybe talk to Erik and company and be prepared to talk about this some at our next meeting and give a better recommendation to the council and the steering committee for the next assessment and start getting some of the things that need to be in, because, given, as we've talked about with SEDAR, scamp has pushed back, and things have pushed back, and it's likely that a research track of red snapper will be pushed back, and I don't think anybody wants to go there, and so this is something that's been on our minds, and I know Julia has asked about it a few times, and this seems the time to bring it up, given what Fred just said, and I think he's right. Trying to get this in there sooner rather than later would seem appropriate.

DR. BELCHER: I was kind of going to echo what Fred had said. I think basically saying it can't easily be incorporated in here is why Erik has given that information. What we're offering is, if you want this incorporated, we need to come up with a way to get this into the queue quicker, in the sense of -- Timeline-wise, it needs to be in quicker. Whether you want to do a research track or not, this is the cost that comes to you at picking a research over doing a standard.

DR. REICHERT: Plus what Fred said earlier. If we recommend a research track, there is no management recommendations that is a result of the research track, and so that should be followed by an operational assessment, and so, given the importance of this issue, I would recommend, if we can, a standard, because I think we can't do a benchmark anymore, right? So that would automatically become a research track, and so I would consider a standard assessment or whatever the equivalent will be called.

DR. SEDBERRY: I think the majority of the heads around the room are nodding, and so, yes.

DR. BELCHER: So clarification, and I think, just because we have Ted's chevrons, where we're talking about the SSC recommends a combination of chevron traps and the video should be evaluated, we're talking about the MARMAP chevron and SERFS, just for clarification, to make sure that we're carrying it through so that we're not muddying the waters.

DR. REICHERT: I think we should clarify that that is a result of the fact of what's called the CVID index. That's a combination of the chevron trap, the SERFS chevron trap, and the video.

DR. SEDBERRY: Just put, in parentheses, "CVID".

MR. CARMICHAEL: Evaluated for what? If we were to put that into something leading up into an assessment, you've got to be more specific.

DR. REICHERT: That goes to the language that we had earlier, that if there is a -- Well, I don't want to use the word "if", but if the chevron selectivity is different from the video selectivity, you cannot combine the two, the assumption of -- That needs to be evaluated.

DR. SEDBERRY: Okay. Does that about wrap up that action item?

DR. BELCHER: Again, just carrying on with the clarification, the SSC recommends evaluating the shape of the chevron trap selectivity curve, and is that the CVID? Hasn't that already been done? I mean, I guess that's in the context of what, and so I don't know --

DR. SEDBERRY: Really, it's the trap index, which is a component of the CVID index, but the trap is the component where the selectivity is questionable and not the video component.

DR. ERRIGO: It's in reference to this bullet point that's up above, that the study suggests that the chevron trap may have a different selectivity curve than the flat-topped that's assumed.

DR. BELCHER: Right, but my point is that Florida's chevron traps are showing that versus MARMAP/SERFS, whichever is doing the chevron, and that's why I'm saying there is two chevron trap surveys that we're talking about. We're talking about the ones that are being combined to make the CVID, and then you're discussing the results of Ted and Heather's work, which is also chevron trap, and so, to use them without a descriptor, I think it gets confusing which way we're going. I just want to make sure it's clear that somebody else reading behind us -- That we're not muddying our own language.

DR. REICHERT: No, it's not the MARMAP chevron trap selectivity. It's the SERFS.

DR. BELCHER: Again, this is where the point of clarification.

DR. SEDBERRY: Okay. I think we've got it. Do we still have Erik on the line? Are we ready to move on to that agenda item? Erik, are you there?

DR. WILLIAMS: Yes, I'm here.

DR. SEDBERRY: I believe you're up next, and we're getting kind of short on time here. Can you get it all in between now and six-ish?

UPDATE ON SEFSC RESEARCH EFFORTS

DR. WILLIAMS: Yes, and, actually, it's a little brief, in part because not everybody had time to report out their latest research, and so I actually only have a couple of items that I was going to report out to you guys, and so this should be fairly quick.

DR. ERRIGO: I will drive, and you just let me know when to switch slides.

DR. WILLIAMS: Sure. Go ahead and go to the next one. I was just going to cover two main projects that I thought would be relevant for you guys to take a look at for what we're working on, and one of them already got mentioned earlier, which is Nate Bacheler's work, and many others are working with him, on gray triggerfish tracking, and then, also, we're working on a paper sort of summarizing recreational fishing in the Southeast.

The gray triggerfish tracking project is a MARFIN-funded project. There's many collaborators involved, as you can see here, including NC State, the Beaufort Lab, the Naval Postgraduate School, the University of Florida, and even the University of Sheffield. Basically, this has some interesting implications, potentially, for how to interpret our fishery-independent survey.

Basically, this has some interesting implications, potentially, for how to interpret our fishery-independent survey and maybe even move us towards the direction of getting absolute abundance eventually from our fishery-independent survey. Specifically, the goals for this study are basically to track the fine-scale movements of triggerfish around baited traps, basically quantifying reaction distances, effective fishing areas, and time spent around traps. Then, using that, to sort of start to make some inferences about absolute abundance of triggerfish within this limited study area, and, from this study, we can elucidate movements under many conditions, both daily period movements and also even -- The fourth item here suggests they are affected by hurricanes, because, when this study was done, we happened to have a hurricane pass by, and there were some interesting results from that as well.

The methods are essentially using the VEMCO Positioning System, which is a -- You can see the tag on the triggerfish in the picture there. It's a transmitter tag that then is -- A net of receivers are deployed over a site, and then hopefully the fish stays within that site, and we can pick the fish up as it's traveling around each of these receivers, and, actually, you can get really quite accurate location estimates with the nice design of the receiver deployment. The study was conducted from September to October of 2017, and it generated a tremendous amount of data. As indicated here, more than 100,000 spatial locations during this limited time, and so you can see it's a limited study, but very intense data-wise.

Some of the manuscripts they're working on already from this is looking at behavior of triggerfish around baited trips, actually looking at estimating the population abundance and basically getting down to density estimates and scaling that up. It's looking at fine-scale movements relative to different things and then even a paper about the effects of tropical storms and how it affected some of the fish movements that they saw from the data. A similar study is planned for red snapper in

2019, and that's pretty much the summary of the triggerfish project. I guess I will pause there, if anybody has any specific questions about that project.

DR. SHAROV: Erik, what area are we talking about, I mean area meaning like is it like one-tenth of a square mile, or can you give us an idea, because it's fine-scale, as you mentioned, and so it would be nice to --

DR. WILLIAMS: I think, if you go back a couple of slides, I think we mentioned the size of the study area was -- It's half a kilometer squared.

DR. SHAROV: So it's essentially moving around a single reef, right, or some structure.

DR. WILLIAMS: Exactly. Yes, the reef was selected because it was sort of an isolated reef. There wasn't much reef habitat nearby, and so the thought was that these fish would hopefully sort of either stay in that site, or, if they left, that they definitely were going to leave probably for good.

DR. SEDBERRY: Okay, Erik.

DR. WILLIAMS: All right. Then the other topic that I was going to hit on is -- This one, we're just starting to work on, but it's sort of -- Now that the new MRIP numbers are out, we thought it was high time to kind of take a step back and just, in a broad scale, look at the recreational fishing in the South Atlantic jurisdiction. Given these new MRIP numbers, what does it mean, and how important is recreational landings relative to commercial and looking at the trends in the recreational landings.

As you can probably surmise, and you've seen some of the results already from the individual species comparisons, but the recreational sector is pretty much the dominant source of mortality for almost all of our species now, and there seems to be this general increasing trend in the recreational fishery.

Here, we're actually looking at the percentage, the proportion, of landings that are from recreational, looking at the whole time series and then looking at just the most recent years, and a couple of things stand out from this. The dark bars are basically the amount or the proportion of recreational landings, and you can see that it's pretty much -- Most of them are over 50/50, which means that it's predominantly recreational landings that are occurring. The very top bar is basically all of them combined, and so, if you were to sort of summarize the South Atlantic right now, based on this data, you would say that we're about a 75, or three-fourths, percent recreational fishery, overall.

Then this is just looking at the time trend of that proportion recreational, and you can see, overall, it's sort of increasing. Maybe, if you look at the last couple of decades, it's more or less flat, but certainly, with the new MRIP data, the indication now is that we are definitely a predominantly recreational fishery in the South Atlantic, and the paperwork we're going to write will certainly have some discussion about management implications and science implications and all of that under this new perception of the fishery with this new MRIP data, and that was pretty much all I had.

There is certainly other activities going on research-wise, but, like I said, I think the Hurricane Florence kind of interrupted everybody, and so I didn't get as much feedback from folks when I put the call out to the lab for topics to present to you guys, and so hopefully next time I'll have a lot more to present.

DR. SEDBERRY: Thank you, Erik. Are there any questions for Erik?

DR. REICHERT: Erik, remind me. Were you guys still doing some age-validation studies, and did those get affected by the storm, or you don't know?

DR. WILLIAMS: We are, and the answer to whether they got affected is partially. We still -- We are right in the process that we had just spawned vermilion snapper, and I think the storm affected the survival of some of those. I think we have a few larvae that have made it, but not many, and so we got a little set back on that, but I think, as far as the other adult fish that we tagged in captivity, they all survived fairly well, and so we didn't have any impacts on the adult fish. It was mostly on the larvae or juvenile fish that we were trying to rear.

DR. REICHERT: Okay. Thanks. That's good.

DR. SEDBERRY: Any other questions? Okay. Thank you, Erik.

DR. WILLIAMS: I will let you guys get back to more selectivity and red snapper discussion.

DR. SEDBERRY: Thank you for that presentation, and we're going to hear more from you later on in the meeting, and, while I'm thanking people, I forgot to thank Ted and Heather for their presentation on the FWCC study, and so thank you very much for that. That led to some really lively discussions. We still have some time left. Do you think we can fit in the SEFIS report, or is that a long one?

DR. REICHERT: I'm not sure what the pleasure of the Chair or the group is, but I think, Wally, your presentation is about twenty minutes?

DR. SEDBERRY: We could do that, and then we'll be back on schedule. Let's do it. I think Wally Bubley will be presenting this, and this is the Southeast Reef Fish Survey Update. Thank you, Wally.

SOUTHEAST REEF FISH SURVEY UPDATE

DR. BUBLEY: I guess let's get started. Most of you probably have been out here before, and you've seen some of these intro slides, and so the Southeast Reef Fish Survey, or SERFS, as it will be referred to from now on, is composed of three groups. It's the MARMAP group, SEAMAP South Atlantic, and the SEFIS group. Basically, we'll be discussing the surveys for the three groups throughout the course of since 1990 for the chevron trap.

The point of the chevron trap survey is to look at targeting low and medium-relief live-bottom habitat in the Atlantic off of the southeast United States. It's deployed in depths from about twenty

meters to roughly 110 meters, and it's been consistently standardized since 1990, in terms of protocol for deployment.

The soak time is roughly ninety minutes, and it's baited with clupeids. Typically, it's menhaden, and, more recently, since SEFIS has come onboard, we have two to three video cameras that are on each trap, and it's looking at characterizing habitat, getting an index of abundance for some of these fish species using the video survey, as well as some behavior around them with these internal traps, and you can see the three cameras marked on the right with the trap.

A secondary gear that we use is the short bottom longline, and this is used to target high relief live-bottom habitat, and it tends to be in deeper as well, generally deeper than ninety meters in depth, and some of the species that we'll catch with this are snowy grouper, the jack species, tilefish, and speckled hind. Once again, the soak time is roughly ninety minutes, and they are baiting with whole squid, and you see a schematic, basically, of the short bottom longline down at the bottom, to give you an idea of what's going on. We have twenty hooks attached to each length of the gear.

Here is a map of the sampling stations, the sampling universe that we have. In the blue are the chevron trap stations, and we have over 4,000 of them accumulated throughout the years, and, every year we select 1,500 to 2,000 randomly selected to sample. The short bottom longline is a smaller universe. We have roughly 300 sampling stations in that yellowish color, and about 100 to 150 are randomly selected each year to sample. There is also some smaller red boxes in there for the long bottom longline survey, but we did not do that in 2017, and so I won't be talking about that today.

In terms of what we get from the information, obviously we get counts and measurements of the fish, but we're also taking life history information, in terms of reproduction and ageing structures for all the gears, and we also produce indices of abundance for both the traps and the longlines. SEFIS is dealing more with the video processing and analysis, and we have assisted with the processing in the past, but, currently, they are dealing with all of the processing and the analysis. Also, all of the samples -- Even though SEFIS is primarily responsible for sampling the areas south from Georgia to Florida, and MARMAP and SEAMAP South Atlantic are sampling more of the northerly regions, all of the data are held in one database and treated as one.

A summary of the 2017 sampling season, we had 1,574 chevron traps that were deployed and fifty-four short bottom longlines with 284 CTD deployments catching -- Well, the gear caught roughly 40,000 fish of sixty-five species, and, of those fish, we kept over 10,000 of them for life history, as I mentioned, the age and reproduction.

The year started off really well, and we thought we were going to break some records, and then the storms started to roll in, and so the last month-and-a-half or two months of our sampling season was very abbreviated, in terms of how much we could actually get out there. Here is just a table with the most-encountered species that we have. I believe the top sixteen species that we caught accounted for about 98 percent of our catch. The species in black are the ones that we took life history samples from, and you can see that we've got black sea bass and -- Tomtate is the top species, and black sea bass is the species that we take life history from that was the most. Red snapper has gone into the top eight at this point, and you can see the other species there, and I won't dwell on this too long, but you can see the numbers that we caught in the 2017 sampling year.

This is an overview of how we looked at the CPUE, and the chevron trap was calculated from 1990 to 2017, and the short bottom longline was from 1996 to 2017, where it was standardized over that time period. We then used a standardization method, a zero-inflated negative binomial model this year. Previously, we've used delta-GLMs, but the zero-inflated negative binomials are more appropriate in terms of the error structure, and, as we've examined them from the previous ones, using the delta-GLM, we see similar trends, but there tends to be reduced uncertainty within these, and so I'm going to go forward, and we're going to be using these for the trends report this year.

Some caveats with this. First, it's a summary overview of what we caught, and this is not an update of the stock status. Also, all of these species that we were looking at were essentially standardized in roughly the same way, and the reasoning for this is because we couldn't go and -- We couldn't standardize everything.

At least for consistency's sake, it's easier to examine this if we standardize it in one consistent way, as opposed to, during the stock assessments, they may have different standardization processes, but, because not all of these species have gone through updates, it's just easier and cleaner and simpler to digest if they're all standardized in roughly the same way, and so, because they haven't all been assessed or updated through the SEDAR process, all of these are standardized in that zero-inflated negative binomial structure.

Let me orient you to the graphs really quickly. The index graphs here, they were all normalized to the long-term average, and so a value of one indicates the average for the entire time series. The black line in there is indicative of the zero-inflated negative binomial standardized index value for that year, and the gray area are the 95 percent confidence intervals, and the red dots are the nominal values that are just the pure catch, and they are not standardized.

This is a new addition that we were asked to put in this year, and we've worked on it, and we'll probably modify it in years coming, but I think it's a good addition. This is some maps of the distribution of our catches, and it shows the nominal CPUE of the catch in quartiles, and so the highest values, the 75 to 100 percent highest values, are in the red, and it's decreasing until the lowest values, which are the green, and then the areas of blue are where no fish were caught in those traps, and so it's not necessarily that no fish were there of that species, but it's just that they weren't caught in the traps there.

We combined five years' worth of data to look at these, from 2013 to 2017, and so I just wanted to reinforce that this is just the chevron trap, and we're not discussing any of the video. Actually, it's the chevron trap and the short bottom longline, and we're not discussing any of the video indices here, and so let me get started. If you have any questions, let me know.

We've got gray triggerfish here, and you see a general increasing trend from about 2010 on, and the distribution of these fish is pretty broad over the region that we've been looking at. If anyone wants me to slow down or go back, let me know. Here are tomtate, and it's one of the most commonly-caught species that we have, and you can see that the distribution is across the area, but it tends to be in the shallower waters, and, after a large drop in the abundance in the early to mid-2000s, we've seen a general increasing trend over the years, to the last couple of years, where it's actually been above the mean for the time series.

White grunt, we've also seen a general increasing trend from about 2000 on, and we are starting to catch them more frequently now. You can also see, with the distribution, where we have this disjunct population, and so most of our catches in the traps are from the more northerly portion of our survey range off of North Carolina, and we have some into South Carolina, but very few south of the South Carolina border, and, because our survey doesn't go past the Port St. Lucie area, we don't pick up on the more southerly range, where they show up in the Keys and off of southern Florida.

This is red snapper, and you can see that it's continuing to increase through 2017. The distribution is, as expected, mostly off the coast of Florida and Georgia, but there is some areas off of South Carolina, and even by Cape Lookout up in North Carolina, where we see some centers of catches.

Vermilion snapper, we're also seeing a roughly upward trend towards the end of the time series, from about 2012 on, and it's pretty widely distributed throughout the range, and that has just recently gone through an assessment.

This is black sea bass, and it actually looks like it's starting to level off a little at the end, but it's continuing on that lower level, and it's actually -- Nominally, I think it's the lowest level we've had during the time series, and you can see a wide distribution as well, mostly centered in the shallower regions of the area.

Bank sea bass are showing actually a similar trend to what the black sea bass was. We're seeing a large drop in the population, and it's staying at relatively low levels over the last five years or so. Once again, the distribution is covering most of the area, and it tends to be a little more shallower.

Gag in the chevron trap, and the chevron trap isn't -- The catch of gag in the chevron trap isn't -- I am trying to think of the term to use for it, but it's not very effective in catching these gag. All the blue area in that distribution on the right doesn't necessarily mean they're not there, but it's just that those aren't where these fish are being caught in the traps, and here is red grouper, and we see a disjunct population in the red grouper as well, and it's a little different from the white grunt, where we see an area off of North Carolina where we see a fairly dense contribution to the catch, and then an area off of say mid-coast Florida. We have seen this increase since about 2000 or 2005, and then a decrease since that, and it's maintaining at relatively low levels since then.

Scamp in the chevron trap, and we've seen a general decrease in the trend and a leveling-off since about 2010. It's interesting that scamp is thought of as a shallow-water grouper species, yet where we're seeing most of the catches of the scamp here are in the shelf-edge type of areas.

Here is snowy grouper. Even though they are deeper species and tend to hang out on the range of where the chevron traps are, we do get a fair number of them every year in the traps, I think sixty or so this past year, and you can see the distribution. Looking at that though, and you'll see it again, because it's a combination of the chevron and the short bottom longline there, but you see it's basically in the deeper areas where we're encountering these species.

Here is the short bottom longline. This is the only one that I want to show with the short bottom longline gear. Because we've had relatively minimal deployments of it, it's not very conducive to

developing an index with most of the species, but the snowy grouper is a species that it actually tends to catch fairly well with where we have it and how we deploy it. Then the knobbed porgy, and this is one of probably the more dramatic ones that we have.

DR. REICHERT: I just want to indicate that, in the briefing book, there is a pinkish bar over the short bottom longline that indicates -- Maybe you will remember in previous years that I mentioned that, due to funding, we were no longer able to deploy the short bottom longline, and so that's the time period where we were not deploying -- We were deploying a very limited number of short bottom longlines, and so that's what that box means.

DR. BUBLEY: Right. It was just opportunistic deployments at that point. It's if we were at a location and we had the gear available, and we would put a drop-down or two, but that was much less than what we had in previous years. Back to this, the knobbed porgy, as I said, it's one of the more dramatic ones that we've seen, where we have a decrease and relatively low levels since about 2010 or so on, and the distribution we see here is similar to what we were seeing with the white grunt, where we have a disjunct population, and so we're catching only mostly the northern portion of this off of South Carolina and North Carolina, and we are not seeing many of these fish come into the traps in the Georgia or Florida areas of the survey.

Red porgy, which is currently undergoing an assessment right now, we've seen a decline in the last few years, and this tends to be a little deeper-water species, in the mid-shelf to shelf edge area of the range.

Then a quick update of this past year, the 2018 sampling season. Again, it began on April 24, and it ended on October 5. Just in terms of the South Carolina DNR MARMAP/SEAMAP portion of this, we had planned for 100 or 110 days at sea. We completed forty-two-and-a-half for the Palmetto, which is the large vessel that we typically deploy the chevron traps off of, as well as four-and-a-half days on the Lady Lisa, where we began looking into deploying the short bottom longline off of that.

We had a total of ten cruises with us, and seventeen total for the whole SERFS group. 643 chevron traps were deployed by MARMAP/SEAMAP, and 1,750 were deployed total, and seventy-two short bottom longline gears were deployed throughout the course of the year. I just wanted to thank all of the staff and everybody who goes out on this boat with us, because it takes a lot of people, obviously, to do this, and I'm happy to take any questions. I'm not too much after 5:30, and so --

DR. SEDBERRY: Thank you, Wally. That was good. Any questions?

DR. SHAROV: Just quickly, in the index, when you calculated this, any factors or variables included other than gear for your zero-inflated --

DR. BUBLEY: The covariates that we were looking at?

DR. SHAROV: Yes.

DR. BUBLEY: We were looking at depth and temperature and day of year and latitude.

DR. SHAROV: But standard for all species, right?

DR. BUBLEY: Yes, correct.

DR. SHAROV: The same set of --

DR. BUBLEY: Yes, the same set. Exactly. It varied between which ones were selected or not, but, yes, the same set was going in.

DR. SHAROV: Thanks.

DR. REICHERT: Maybe one caveat is you may remember that when SEFIS came on -- When we got the additional funding through SEAMAP and when SEFIS came onboard, we were able to expand the regional coverage, and so there are some confounding factors in terms of the length of the series. In the most recent years, we had much better coverage of the entire area than in the earlier years of the series, and we tried to address that by the standardization, but, if your changes are too large, you may have to take that into account.

DR. SEDBERRY: Wally, are you seeing any increase in oddball tropical species, unusual tropical snappers or groupers or other species in more recent years?

DR. BUBLEY: Yes, and this is all anecdotally, because what I've seen really when I've been out there -- I mean, we've definitely seen more mutton snapper and some of the other snapper species that we haven't seen quite as frequently, but, like I said, this is all anecdotally, just from my idea of what I've seen out there, and I haven't got a chance to dig through as much of the dataset, just because it's so large.

DR. REICHERT: This is kind of a question that I always ask, but the council has asked for these maps, and they found them very, very helpful, and so my question to this committee is, is there anything else that we could potentially add in these updates for the committee that may help the committee with whatever recommendations they are drawing from this? Let us know, and we may be able to add that.

DR. BELCHER: Through the SEAMAP, I know that Tina was working on some of those ones where it was showing like shifts in distribution over time, and is that something that might be potentially something you can work on, with like the five-year -- If you end up with that distributional change and shift, as we're kind of postulating that a few species are doing.

DR. BUBLEY: I think that was one of the reasons why we started to put these on here, and, because this was the first year of it, and it's a pretty big report to start with, and we were starting with baby steps and just getting the five-year -- That's why we only have the five-year in there, because we thought of something like that, where we're going to go back and break it up into clusters of like five years or so, is I think what we were looking at, and, in the future, we'll look and see if we see any kind of distributional shifts going on with that.

DR. REICHERT: Personally, I think this information, in combination with Atlantic trends, and I think the fishery performance reports, I think that would help this committee with

recommendations on both assessments and other items to the council, and so I think it would be useful to see them together whenever we see them during committee meetings.

DR. SEDBERRY: Any other questions for Wally or about the SERFS survey? All right. We will take additional public comment, since we're getting down towards the end of the day here, and this would be our second or third public comment opportunity of the day. Do we have any public that wanted to comment? Then thanks, everybody, and that appears to be -- We have covered the first seven agenda items. Tomorrow, we have the exciting MRIP data and assessment review, and so be sure and get a good night's sleep, because you will need to be alert, and we will start at 8:30. So, until then, we are recessed. Thank you.

(Whereupon, the meeting recessed on October 15, 2018.)

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OCTOBER 16, 2018

TUESDAY MORNING SESSION

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn, Charleston, South Carolina, October 16, 2018, and was called to order at 8:30 o'clock a.m. by Chairman George Sedberry.

DR. SEDBERRY: Everybody please take your seats, so we can get started. Thanks, everybody, and welcome back to day two of the South Atlantic Council's SSC meeting. We have some new people that have joined us overnight, or they're not new people, but they weren't here yesterday anyway, and so I would like to welcome Eric Johnson, Fred Scharf, and Jeff Buckel and have them introduce themselves so that we have a voice record of what you sound like.

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

DR. SCHARF: Fred Scharf, University of North Carolina Wilmington.

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

DR. SEDBERRY: Thank you. Is there anybody else new today that I might have missed? I don't think so. Okay. We have one little point of order that I forgot yesterday when were talking about approving the minutes of the May committee meeting. We also had a -- In the spring, we had a SARIMA webinar meeting, for which the minutes were distributed in the briefing book, and we need to have approval of those minutes as well, and so are there any additions or corrections or changes to the minutes of the SARIMA webinar? Hearing none, they are approved.

Our first agenda item this morning is the MRIP data revisions review, and I have, on the list of assignments for note taking, Jeff, Scott, Chris, Genny, and Fred Serchuk, and so please make sure that all the important points are recorded, to help Mike out with his notes and to just keep them in mind for when you review the report. The important points that Mike is recording and anything

else that you have recorded get included in the report. Again, the first item is the MRIP data revisions, and these are Attachments 11 through 14, and the presentation will be by Mike of the South Atlantic Council.

MRIP DATA REVISIONS REVIEW

DR. ERRIGO: All right, and so what I did was I went through, and I pulled the data from the MRIP website and got all the data -- The landings are in numbers. All the landings are in numbers, and I compared the original estimates of MRIP that we have been seeing to what the new calibrated dataset looks like, and this is both the FES calibration and the intercept, the APAIS, calibration, and so this is the fully-calibrated dataset.

Really quick, just to bring everyone up to speed here, and whoever is on the webinar, there are two different surveys that were calibrated for, and one was the Fishing Effort Survey, or the FES, and that's the new mail survey for effort, and it replaces the Coastal Household Telephone Survey, and it uses the USPS database and the angler registry. It's getting higher estimates and more accurate estimates of trips, of angler trips.

The Access Point Angler Intercept Survey, or APAIS, there was a new design that rolled out in 2013, Wave 2 of 2013, and it has a better time-of-day coverage. It better accounts for -- There is no choice for the interceptor, or the dockside person, and so, originally, they could go to a site, and, if there wasn't anything going on, they could go to an alternate site. The way that they've redone it, it's not as -- It's not quite as haphazard, and so they have to go to a site for a certain period of time, even if nothing is occurring.

There are certain times of day that they have to go, and so there is the early mornings and the peak times and the night times, and so they have better coverage for the entire day, and it's a more statistically-sound design for APAIS. These two calibrations were applied to the MRIP data together.

For the Fishing Effort Survey, they are reaching more people, more anglers, and so there are several problems with the Coastal Household Telephone Survey. One is they weren't reaching as many anglers as the mail survey is, and the other is that, when they called people, sometimes they would get someone who is not the angler, and so they wouldn't have any idea about fishing, and the angler wasn't there, and so they wouldn't get any information. This time, when they mail the survey, it doesn't matter when it arrives, but they have it for a certain period of time, and so it gets into the hands of the angler at some point.

They also have a much higher response rate than the Coastal Household Telephone Survey has had recently, a three-times higher response rate. The questionnaire is improved from the questions that were on the telephone survey, and they are getting more complete answers than they have been from the telephone survey, because the angler has the survey for more time, and so they're able to go back through and take their time answering the questions.

The calibration models, there is a separate model for each survey. Both were developed and tested using three years of side-by-side data, and the calibrations -- These two calibration models replace several other older calibrations, and so what we have now is not a calibration of a calibration, like

we had originally, and they were both peer reviewed, and the peer reviews are completed, and both of the calibration models were endorsed by the reviewers, and each survey is now fully implemented, and so the Coastal Household Telephone Survey and the old APAIS design no longer exist.

This is the overall effort, and this is private boat effort, in the South Atlantic, and this is the comparison between the original MRIP effort estimates and the new calibrated estimates. It will always be that the red line is the new calibrated estimates and the blue line is the original MRIP, and so what typically is happening -- What we're seeing is there is shift -- Around 2000 or so, there is just a shift in the effort up from the original survey to the new mail survey, but then, after about 2000-ish, there is a trend.

There is a much higher increase, and it gets larger over time, and so that's the difference between the telephone and the mail survey, plus what they're calling a wireless effect, and so, after this time period, more and more households went from landlines to wireless, and the Coastal Household Telephone Survey does not include any wireless numbers, and so they just basically were removed from the Coastal Household Telephone Survey by default, because it doesn't include any mobile numbers, like wireless numbers, and so that's this effect here, where you see it's wider. The difference is wider, and it gets larger over time. This is the shore effect, and so this is just shore mode, the difference in effort in shore mode, and it's much larger than the effect to private boat mode, but there is much less of a wireless effect than there was in the private boat mode.

When I went through all of the species, all of the federally-managed species, I was looking at the different changes to the catch time series, and they kind of fell into five main categories, and so I kind of grouped them together. The first was the catch didn't really change much. It's about the same, and this happened in species where there were very few intercepts and in areas that had lower expansion factors, and so lower amounts of effort, and so you wouldn't expect to see a terrible amount of change in those species.

The next group that I noticed was the trend was about the same, but there were higher amounts of variability in the new time series than in the old time series, and this happened for species, again, that had very few intercepts, but occasionally -- There are areas where there are very high amounts of effort, where they were intercepted, and so, when the -- When we went to the new calibrated series, those spikes got a lot higher, and so the amount of variability increased because of that, and you will see the examples in a minute.

The next one down, the next group, was that the catch shifted, but the trend is basically the same, and so these are species that have frequent -- They are more regularly intercepted, and the intercepts occur in areas that have both high and low amounts of effort. These last two categories are where we see the trends actually change in the new series. The first one is that there are larger changes in the early part of the time series, and, for these species, there is a higher average effort expansion where they're intercepted, and this difference in the early part of the time series might be due to changes in targeting or how the fishery operates or possibly the proportion of the catch by mode changes, and so you're seeing higher proportions of the catch are by -- Let's say private boat, and then they shift to charter mode, which is not affected by the FES calibration, and so that's why you would see much larger changes in the early part of the time series and then not as big of a change in the later part of the time series.

Then the last one is where there is much larger changes in the later part of the time series, which is basically due to the wireless effect and the fact that the Coastal Household Telephone Survey experienced decreased response rates over time, and so that's why you see much higher differences in the time series later in the time series.

I will just go through the different trends and show you examples of each one, and so these are where the trend is about the same, and these are species that -- They are relatively minor species in the catches, and they are typically not targeted species, and so bar jack, and blueline is not often intercepted. Then tilefish, golden tilefish, and then the Georgia/North Carolina stock of hogfish, red porgy, and the ones that are broken down into landings and discards are the ones that have assessments, where both landings and discards were used in the assessment.

DR. SEDBERRY: Mike, I think we have a question.

DR. REICHERT: In the previous one, there were gaps in there, and remind me -- Was there no data or --

DR. ERRIGO: Gaps means there were no intercepts in that year. Snowy grouper is another one where there is very little change, and there are not terribly large numbers of intercepts for snowy. Silk snapper, which is part of the deepwater complex, and then here are the ones that have the same trend, but just there is higher amounts of variability, and so, overall, the deepwater complex -- I have the complexes, and then I have the species broken out also, because sometimes the complexes and the species within them have different trends, because it depends on what the dominant species is, and so, like here, you will see the trends are similar, but the peaks are much, much higher. Sand tilefish, that's where you're seeing a lot of the trend from the deepwater complex. Blackfin snapper, although it's very rarely encountered, when it is, those peaks are much, much higher in the calibrated time series than they were originally.

Of course, some of these can be up to interpretation, and some of them have such little data that you might say they belong in a different grouping, but I do my best with the little data for some of them, and lesser amberjack are also very rarely encountered, but more variability. This is banded rudderfish, and the reason why it has an inlay here is because, for some reason, these early years had extremely high estimates, and so it completely suppressed the later portion of the time series, but, if you remove these years, you can see that the -- It shows a similar trend, but much higher peaks, where there are peaks, and so that's just a higher variability and seeing a similar trend, and that's why there is an inlay.

DR. SHAROV: Sorry, Mike, for interrupting, but I feel we might run into it with other groups. I had a question with the first group, and I think probably a similar question would be applied to the other groups. Would it be correct to say that this first group that didn't have much a change, in terms of scale, that happened because of the source of the harvest and it was the fishing modes that produced that catch were not much affected by this recalibration at all, because, in general, with what you showed, the private boat is like threefold higher for the whole time series after it is adjusted, and the shore mode is about two-times higher, and so you would normally expect that everything is scaled up, but these are not. Therefore, there is something common among them, and it should be coming either from charter boats, primarily, or something else, and is there any interpretation of this?

DR. ERRIGO: The species that have low number of intercepts, it's difficult to show a trend in which mode is landing them, because it could be -- Everywhere there is a dot, there were intercepts. Everywhere where there is nothing, there weren't, and so there were intercepts here, even though there is like hardly anything there.

That could have been private mode or charter mode. The problem is it depends on where it was intercepted and what the effort estimate was in that area. Even in the newer time series, there are still very low estimates of effort in certain areas, and so, with these species that have very low numbers of intercepts, it's very up and down, hit or miss. Later on, where there are much more numbers of intercepts, there is a trend in charter versus like private mode, and very few of these are affected by shore mode. There are some species.

DR. SHAROV: Right, and I understand. What I am thinking, maybe too primitively, is that, in the end, it's the catch per unit of effort that comes out of APAIS, which I assume has not changed, times the recalibrated effort, and so, if it's not changing, and if CPUE is more or less constant, then your effort must be constant, and the only way that you would come up with the result of very little change for those stocks, right? That was the only reason for my question.

Therefore, if, generally, we're seeing a significant increase in effort, at least in the private mode, private boat mode, and the shore mode, then the only logical explanation is could it be in other fishing modes, and I didn't mean to distract from this for too long, but I was just trying to understand what is happening.

DR. ERRIGO: I see what you mean, and, actually, here, in blueline tilefish, that is probably exactly what you're seeing. A lot of these catches are probably from charter mode, and that's why you don't see huge differences. You see a pretty big difference in this year, and there are probably more private catches that were intercepted, private mode catches that were intercepted, and that's why you see a much larger shift in that year, but a lot of the blueline tilefish catches tend to come from a charter mode than private mode.

DR. REICHERT: This may go into the discussion, and so let me know if we need to postpone this, but that's why I was a little surprised that red porgy was part of that group, because this is a species where you would not expect very few intercepts.

DR. CROSSON: You would expect lots of intercepts?

DR. REICHERT: Yes, and so, anyway, I was just trying to wrap my head around that a little bit.

DR. ERRIGO: That one, I am not 100 percent -- I don't know if I -- I don't think that I looked that closely into red porgy, but I can. I can dissect red porgy more.

DR. CROSSON: I would agree. That was the one that -- I mean, if you look at the number of intercepts compared to all the other ones that you have in this classification, and it is exponentially larger, and you think of red porgy as being a pretty large fishery recreationally, and so that's one that we should definitely do a little follow-up on, I think.

DR. ERRIGO: Okay, and so I will just go through these, and then, if you guys want to stop for questions, please feel free, because I'm just going to show trends in what I found, what differences I found.

DR. SEDBERRY: Yes, I think we can take clarifying questions at this point, but then we need to have public comment before we start any discussion.

DR. ERRIGO: Yes. Here is cubera, and, as you can see, whenever there is like peaks or spikes, the spikes in the new series are much higher, and so margate is the same kind of thing, and there is the shallow-water complex, and so this is mostly shifted, but a lot of the species are just higher variability species. With saucereye and scup, there is almost no intercepts of those, and so here is catch shifted up with the same trend.

Spadefish is shifted way up, and gag is almost the same trend, but shifted up, and both landings and discards broken down, because this is an assessed species where landings and discards were used. The Florida Keys/east Florida stock of hogfish, red grouper, and I probably could have taken these peaks out, and you would see that this is nicely shifted up. Scamp. Then yellowtail is also shifted up across the time series.

Tomtate is -- They are very, very close earlier in the time series, and then they are shifted, and it's completely shifted up here. If you take away this, you can see a shifting here, but it's much, much smaller, and the porgy complex is shifted up, in general, and then, if you look at the components, most of them are shifted up.

Then there is king mackerel, and you see a little bit more divergence in the end here, but it's very close to the end, but the entire time series is shifted, and, later on, if you looked at this, you will see that there are some species that have a much, much bigger difference later in the time series than they did earlier, and so here is the ones that have a larger difference early in the time series, and so black grouper clearly has a much larger difference early in the time series, and then here is the grunts, and so white grunt and sailor's choice have a lot larger differences early on, and those are the only ones.

There were not very many like this, and, for like black grouper, this was a shift from private mode to charter. There was a much higher proportion of charter later in the time series and a much higher proportion of private boat earlier in the time series.

Similar for these guys, during those years, but like sailor's choice is not that terribly many intercepts, and then these are the ones -- Like black sea bass, this is because, pretty much, of the change in status for the revised assessment, this much higher difference later in the time series, and that's discards, which are much higher than actually the -- You can see that this graph tops out at 1.8 million fish, and right here is four-million fish, then six, eight, ten, twelve million, but those are total discards and not dead discards. This is gray triggerfish. Then greater amberjack. It's not as pronounced in greater amberjack, and mutton snapper is very pronounced in the discards, and red snapper, again, is very pronounced in the discards.

DR. CROSSON: Can I stop you again, Mike, and ask -- Red snapper, can you just refresh my memory? Isn't there some shift in the way that we're tracking red snapper, because of the mini-

seasons that they've had in recent years? I mean, the states are collecting data, and it's a little bit different.

DR. ERRIGO: Yes, for landings, but most of the take of red snapper is coming from discards, which MRIP can track. The discards are coming actually from MRIP, because those are happening year-round in all waves, and so that's why the shift in the landings is not -- It's kind of haphazard, and it's the discards where it's coming from, and so here is one-million, two-million, and this is two-and-a-half million here fish, whereas this graph tops at 400,000, or 450,000, and it's hard to see on this screen.

Vermilion snapper has a huge shift at the end, landings and discards, and the jacks complex, which is mostly due to almaco jack, and the snapper complex, and that is gray snapper and lane snapper. They both have large shifts at the end causing this. Dolphin has a larger shift, and it starts almost back where the shift starts in the effort survey, around 2000, and it stays larger than it does back here, and then it gets very large at the end.

Wahoo has it. Spanish mackerel. Then I put in cobia also, since we're assessing that one here, although it's falling out of the council's purview, I think, and I think we approved that amendment. Both of the stocks show it. Landings become -- They drop way down here, but it's still a larger shift than it is back here for discards. That, I think -- Yes, that's the last trend, and so if anybody has any questions.

DR. SEDBERRY: Thanks, Mike. We can take clarifying questions before public comment. Any questions?

DR. CROSSON: We usually monitor the ACLs in pounds and not numbers of fish, and is that correct?

DR. ERRIGO: Yes.

DR. CROSSON: Did you run any of these species -- Did anything stick out if you ran it in pounds?

DR. ERRIGO: I did not look at them in pounds, because we -- The poundage that we monitor the ACLs in is calculated in a different way than MRIP calculates the poundage. The Science Center calculates the poundage differently, and we do not have those estimates, or those poundage calculations, and so I did not look at them in pounds.

DR. SHAROV: Mike, did you have a chance to look at the AFS final report, the recalibration report, and are you familiar with -- Do you know what factors or variables were used in the calibration model to re-estimate this new catch and discards? It is clear, from what we looked at, that some factors are being used that do have an effect that results in significant differences for some intervals of time and then much smaller differences, or no difference, where you pretty much have about the same catch estimates, which, in contrast, what the presumably overall much higher estimated private boat effort or shore effort, and so I was wondering if you had -- Because, when I tried, that report was still not available, and I didn't try very recently, but I think it would be useful to know what did cause a particular increase or decrease in the trend for whatever species we're looking at.

DR. ERRIGO: In the particulars, like here, there is almost no difference, but, here, there is a huge one. A lot of those have to do with the specific effort estimates in a particular cell, and so a particular intercept site on a particular time on a particular date, and sometimes those expansions are large, and sometimes they're small, and so the difference, when they calibrate, is up. It's large or small, in such a -- When you're looking at that small of a point, it's hard to tell what caused a small versus a large change.

I did include, in the background materials, the reports that were available, but, for a particular point, I think the differences, I think, have to do with how that original effort point was estimated, because the calibration model uses the same factors for all the effort changes through time, but I don't know. I couldn't guess why one thing was larger or smaller than another.

DR. SCHARF: Mike, and sorry if I missed it, but, in the background materials, is there a table or data that shows the number of intercepts by species by year? I am wondering about sometimes where, in certain cases, you see species where you see a relative change that's kind of constant, and then you see huge spikes in certain years, and whether those are driven by a big increase in the number of intercepts or a small increase and how -- When they did the calibration, how did they account for sort of the confidence they have based on the number of intercepts that are fueling those big changes?

DR. ERRIGO: Spikes are not always -- They are not always caused by increases in intercepts. Sometimes they are caused by a single intercept in an area that has a very high estimate for effort, and so that has happened for species like snowy grouper and blueline tilefish. Like in the Keys, they will intercept one trip that has several snowy on it, but it will double or triple the estimate for the entire South Atlantic, because the effort in the Keys is much higher. The effort estimate in the Keys is much higher than it is for let's say anywhere else in that particular time period, and so it doesn't necessarily have to do with the number of intercepts.

There isn't a table like that. I could create one, but it may not be as helpful as you think it would be. How it is accounted for, I don't think that it is accounted for, and I think they just -- Whatever estimates there were for a particular area/time interval, they changed, and then that is applied to whatever intercept happens to have occurred in that area.

DR. SCHARF: Just as a follow-up, just to make sure that I understand what you were just saying, it's that, if you have an area where the effort is high, you can have -- You can have a large effect from even just a single intercept if that area has a high effort to begin with.

DR. ERRIGO: Yes, that's correct.

DR. BUCKEL: Just to add on to that, one thing that -- It will show up in the MRIP tables online, but you will see large PSEs when that happens, and that's my understanding, and so, if it's just a single intercept, then you have this very large variance associated with that spike, and so sometimes you see those spikes, Fred, and then it's got this giant PSE, and so you don't have much confidence in it, and, other times, it's smaller, and probably more intercepts.

DR. ERRIGO: It's that, oftentimes, the more intercepts you have, you don't get spikes, and you get lower estimates, or more constant estimates anyways.

DR. SEDBERRY: Any other clarifying questions? Do we have any members of the public that would like to comment on this? It appears we have no public comment, and so we can now move on to discussion and the action items, which are --

DR. ERRIGO: Hold on. Chris Dumas had something.

DR. SEDBERRY: Go ahead, Chris.

DR. DUMAS: I had a question about the wireless effect. On your slides, it seems that that explains, at some point, a large portion of the difference between the new estimates and the old estimates. Is that wireless effect correlated with angler income? Does the wireless effect mean that, as people shifted to cellphones, over time, with likely higher-income people shifting first and most, that it was the higher-income people that were under-sampled more than lower-income people using the old method, so that, when we shifted to the new method, those higher-income people were picked up more?

If that's the case, that could explain some of the large shifts we're really seeing. If the higher-income people take more trips, and more trips in ways that catch more fish, perhaps, then, if we were under-counting them earlier, then counting them now could make a really large difference in the trip estimates, especially if they take more trips, and that's all. Thanks.

DR. ERRIGO: Thanks, Chris. That's actually a really interesting question. I can't speak to the income level, but I can say, from listening in to all the MRIP conversations that happened during the different meetings, that the mean age of the population that was sampled from the telephone survey was significantly older than the mean age of the actual population, and so it seems that younger people were switching over to wireless, and we were missing a lot of the younger population, which is now being picked up by the mail survey. I don't know about higher income or not, and that's possible, but I haven't seen or read anything about that, but I do know that definitely, when it comes to the age difference, yes, the telephone survey had a significantly older population than the mean age of the actual population.

DR. BUCKEL: Just as an add-on, not just -- Looking at it from the wireless, the older folks may have gotten wireless phones, but they were less likely to drop the landline, and so that's just a little distinction, and so it's dropping the landline versus keeping the landline.

DR. CROSSON: Just because I was curious, I went and looked it up, because we do the expenditure, the economic expenditure, from MRIP every few years, but there is no question in there about income, but just about expenditures.

DR. SEDBERRY: Thank you. We have two main action items so far for the MRIP data. The first is review the calibrated MRIP effort and catch estimates for all South Atlantic stocks, which Mike just presented, and then we have some sub-bullets under that to identify any stocks that the SSC would like to investigate in further detail and develop a process for conducting such investigations. Identify any general patterns in the calibrated estimates that may indicate new or increased biological, social, or economic concerns that the council should be aware of, and review the calibrated MRIP data with respect to changes to the ABC recommendations for unassessed stocks. Then the second action item is discuss the procedure for updating ABC recommendations

for unassessed stocks, and part of that -- I don't know if we're being asked to revise ABCs at this meeting, and that's something to discuss.

DR. ERRIGO: We don't have the information available to revise the ABC for unassessed stocks at this meeting.

MR. WAUGH: I think too what would be helpful as you all discuss this is -- No doubt there are statistical improvements to the methodology, and certainly, where you have adequate samples, the PSEs are lower and the values are more useful. Most of our species in the EEZ are rare, and so you have low intercepts, and so there's a much higher variability.

As Mike just discussed, one intercept can blow our ACLs, and so it would be very helpful to have some advice from the SSC on how you would advise the council about the variability of assessment outputs, particularly for our EEZ species. Right now, we get these output values, and we're treating the point estimate, and any input you all have, advice to the council on how to consider those -- Estimates of discards are an assessment input, and that's a critical factor going in, and how does that variability get reflected in the output? Any information on advice for when we're doing quota tracking and how you build in some advice on the variability of that, because, right now, were basically using the point estimates that come out. That would be very helpful.

DR. SEDBERRY: Thank you, Gregg.

DR. CROSSON: To that point, unless I'm mistaken, I believe that, because of the new mail surveys and the change in methodology, the lag now for information is going to be extended. I think right now it's like six weeks before you get the information about what you've caught, and I didn't see anything in this presentation, but I think I've heard that it's going to be longer than that, and so that would indicate that, if there's a species that the council is worried about overrunning the ACL, in-season monitoring is going to be problematic, and so you may have to increase the buffer between the ACL and the ABC.

DR. REICHERT: A note that I made is that, for some of the unassessed species, the species that we originally applied the ORCS to, we used the landings in the period 1999 to 2008, and so I think it would be good to look at, particularly in that region, what the effect is of these new MRIP estimates for potentially looking at ABC revisions. I know that was a while back, but I just wanted to remind us that, for a number of these species, that was the timeframe that we used.

DR. SERCHUK: The errors around the estimates can often be caused by low sample sizes, but that was certainly true with the old unadjusted data, which we've gone and used blithely, and, unless we put some decision rules in about how much uncertainty we were willing to accept, and so I understand that we're dealing with -- Now we've standardized that, but the fact is the underlying data are the underlying data, and they haven't actually changed very much on that.

They made a few changes, but the fact is, for any assessment that has recreational data in it prior to MRIP standardization, those same problems exist, and so I'm wondering -- It's not a new problem, and it may be more of an issue now that we see these large differences, but the underlying data are the underlying data, and so let's not fool ourselves that we have an MRIP standardization problem here. We have some additional issues, but the same problems with low intercept size

affecting recreational estimates were there in the basic dataset, and so some of our old assessments may still have that problem and which we set management measures for.

I am just saying no one went in and changed the basic data. They have made some adjustments due to the effort, and that's certainly true, and I am not really quite sure what they did with the APAIS, other than recognize that some of the sampling was biased, because it was only during the day, and there were some other issues, and they may have stratified that differently, but I just want people to be cognizant that no one changed the underlying data. The underlying data were used in the processes that were in both of these exercises, the effort standardization and the APAIS data. Is that correct, Mike?

DR. ERRIGO: Yes, and the intercepts are all the same. All that data is identical, but they just recalibrated the effort, and then, with the APAIS calibration, what they did was they -- They re-adjusted the weighting schemes so that they had a better understanding of time of day and was this peak or was this not peak or what type of trip was this, so that they can better weight the trip before applying the effort expansion.

DR. JOHNSON: Just to follow-up on that too, I think certainly the underlying things are there, but, as effort, at least across the board -- It depends on all these different waves and sectors, but it's definitely gone up, and so the expansion factors are certainly exacerbating the problem.

DR. SEDBERRY: Chris, do you have any questions or discussion items, or anybody else on the webinar?

DR. DUMAS: Not now, but I'm just trying to catch up on all of this. We had a little hurricane evacuation issue this past month, and so I'm not as prepared as I otherwise would be, but I am trying to catch up, and I appreciate the great presentation. Thank you.

DR. SEDBERRY: Well, we certainly understand and appreciate your efforts in sitting in on this and providing your input. Thanks. Okay. Where are we on our two main action items? Marcel, did you have something?

DR. REICHERT: On the first one, red porgy was definitely one that struck me. We are asked to develop a process for conducting such investigations, and I'm not quite sure, other than looking at the sources of the information and see if there is something in there that may help us interpret the pattern.

DR. SEDBERRY: Thank you, Marcel. Any other discussion items?

DR. CROSSON: Now that we have these fishing population estimates from the new licensing frames, do we generate confidence intervals about what we expect from these different species? I mean, these are surveys, right, and so we have some idea of confidence intervals and response rates, and, I guess, for the lower-intercept species, those would be higher.

I don't have a clear question there, and I'm just trying to think how this is going to work, again, in terms of monitoring and whether that is useful information, and I guess that's always been the case. If you have lower-intercept species, then you're going to automatically expect that there's

going to be larger estimates and variability around it, and that's not really going to change. That's the same as it was before.

DR. SERCHUK: I think Scott brings up a really good point, and we have the same problem when we talk about the underlying data for the assessments. How many age samples are enough? If we don't have more than ten age samples, or fifteen age samples, or so on and so forth, we have some idea -- Or we can use confidence limits, or we can use standard errors, and so I think the point is a good one.

I don't know whether we can have a rule-of-thumb or whether this has to be done on an individual basis for a particular stock, but how much data is sufficient and how variable are those data to say that this is useful information to determine an estimate to go into an assessment, and we do that, as I said, for all other inputs, and so I don't have the answer, and I don't know whether we can have a rule-of-thumb, but I think we have to look at this on a case-by-case basis and say does the data analyst using this information feel that we're getting representative patterns that are sufficiently robust to provide meaningful estimates. Thank you, Chair.

DR. SEDBERRY: Thank you, Fred.

DR. NESSLAGE: Regarding this bullet point about socioeconomic concerns, I just keep thinking about what Mike was mentioning earlier, and it was mentioned on the webinar as well, that there seems to be more older respondents than younger respondents, and it just -- Seeing the trends overall in effort either going up, or at least staying the same and not going down, as other reports or assessments of angler and hunter numbers have indicated, and it seems that anglers and hunters total have been going down, and so it seems counterintuitive.

Then I got to thinking that maybe this is a baby-boomer effect. Are we picking up on that? Is that possible that now we're seeing a bunch of retirees suddenly enter the angling business, if you will, and, if that's the case, and I don't know and I'm just speculating here, and I was curious if you guys that knew anything about it could talk to that, but then, if that's the case, should the council expect, over the next five to ten years, increased effort, as opposed to decreased effort, which is what other assessments of outdoor activities might indicate? I'm just throwing that out there.

DR. SEDBERRY: Very good point. Thanks.

DR. YANDLE: I can't specifically answer that question, but that seems like something that there should be some relatively easily available more general social science data on that. Staff should be able to access that pretty easily.

DR. SEDBERRY: Speaking as an older person, I have both a landline, and I do fish more than I did a year ago.

DR. SERCHUK: I think the issue is more complicated than a simple thing about older versus younger. Certainly there is an effect, but clearly the older surveys that were done by telephone were biased. They were biased in a couple of different ways. Whoever answered the telephone was responsible for the recall, and the recall was in the matter of the telephone call. There was no time to consult with other members of the family, who may have also been fishing, and there was no time to consult records, and so what the mail survey has done is basically said, look, here's a

whole set of questions, and we don't expect immediate feedback from it, but it gave more opportunity for those individuals who were contacted, particularly to mull over the questions and give a fuller response and perhaps contact other family members who were fishing.

A youngster could answer the phone, or a spouse who doesn't fish, and they wouldn't have any idea, in many cases, what was going on, and so there was a bias, in many cases, to underestimate the effort, simply because the recall time was short and they didn't have the opportunity to fully explore the breadth of the questions, and so let's not forget that as well,

DR. SEDBERRY: Thank you, Fred.

DR. ERRIGO: Also, to that general pattern, the response rate for the mail survey is three times higher than the telephone survey is now, but the telephone survey had the same response rates as the mail survey has now back ten or fifteen or twenty years ago, and it dropped off, and it's been steadily dropping over time, and so it hasn't been constant. It hasn't been constantly at like 10 percent. It was up in the thirties and forties, and it had been dropping, and then now the response rate to the mail survey is up in the thirties and forties percent, where the telephone survey used to be.

DR. SEDBERRY: Thanks, Mike. Have we addressed the actions items and the two points that Gregg brought up about advice to the council on variability and tracking the ACL?

DR. YANDLE: Just following-up on Genny's point earlier, I just was doing a quick online search of the literature, and there does appear to be some decent research being done there about variabilities in generational rates of angling and hunting, and so it's not -- I haven't found anything specifically looking at MRIP, of course, but there does seem to be some literature that would be worth digging into to see if we are looking at sort of a bold change in the system, so to speak.

DR. SEDBERRY: Thank you.

DR. CROSSON: Yes, but the population has increased drastically along the southeast coast, and so that may be overwhelmed by the fact that there's a larger proportion of the population actually existing and able to go fishing.

DR. ERRIGO: Was red porgy the only species that people wanted to look closer at?

DR. REICHERT: That was the one that jumped out at me, and I'm not sure if we -- Do we want to quickly run through them and see if there is some other species that we want to take a look at?

DR. CROSSON: I looked through all of these before I came here, to this meeting, and I looked at them again on the plane up here, and I didn't see anything other than red porgy that really jumped out at me. I don't feel like we need to go through all of these one at a time. Is red porgy one of the ones that's up for assessment pretty soon?

DR. ERRIGO: Yes.

DR. CROSSON: So we definitely want to look at that one.

DR. NESSLAGE: For each of the new assessments and updates, will there be -- I am anticipating that folks will take a closer look at the data workshops and have a little section or paragraph or two, perhaps, on why there might be differences. I mean, it's probably not the SSC's responsibility to review all of these. When each one comes up for assessment, perhaps there will be a closer evaluation, and I don't know. What are your thoughts on that?

DR. ERRIGO: Unless it's an unassessed species, I would assume that they would probably -- If it's newly assessed and they're using the new data, I would think they would look at it, but, if the SSC has concerns and you say that, then they would be sure to look at it.

MS. LANGE: That would possibly fit into develop a process for conducting such investigations. Just add it as a term of reference in the data workshop to consider changes in the old versus the new recreational estimates.

DR. SEDBERRY: Excellent suggestion, and so that would be under the procedure for updating the ABC recommendations.

DR. REICHERT: I would argue not just for data workshops, but, for instance, in standard assessments. I think we should add that, too. For any update or standard or interim analysis, for any assessment or analysis, this may be good to take a look at.

DR. BUCKEL: One other species that we could consider adding, along with red porgy, is black sea bass, the discards and that big jump in the last four years that are over ten-million discards. It would be interesting to see what led to that change.

DR. SEDBERRY: Thank you. Good suggestion.

DR. BELCHER: So, procedurally, would we still be able to do updates? If the MRIP numbers are changing dramatically, would you -- Obviously it's not the same methodology, and, if you have a big enough swing, it's -- Scott is looking at me with a question, and so MRIP is changing, and in some species it's dramatically, and so, to do an update, what we're doing is adding on to the stream of numbers. With MRIP, you can't just add the new numbers on to that, because now we have a different scaling factor, because you've got the old time series, and how do you add the new ones in? Technically, an update can't really be carried forward.

DR. SEDBERRY: Because this is a drastic -- By our definitions, this is a drastic change, or not drastic, but a significant change.

DR. BELCHER: For certain species it can be, yes.

DR. REICHERT: I agree. If we recommend that elevating assessments to a standard, because we have the video index now, and I think, looking at that, this would definitely, in my opinion, mean that you should not do this in an update framework.

DR. SEDBERRY: But you're suggesting just change the framework, or maybe you're not.

DR. BELCHER: I think it's more for the discussions as we have assessments going forward, that any of them -- Especially if there's a heavy reliance, and, like we were talking about earlier, the

majority are recreationally-caught. To do an update, where we normally just tag on new years, we can't do that in that case, and so the question would be, if we're having a dependency on those MRIP numbers, can we really do an update? Wouldn't we have to go and do one level back, where we're looking at it as a, quote, unquote, new methodology approach?

DR. CROSSON: Back on the social and economic concerns, and I'm trying to think this out, and I would appreciate any feedback from the rest of the committee, but this is going -- I know that the question about sector allocation is going to be significant, because of these new revisions, but, as I think through the process, perhaps the recreational sector is excited because they feel like they're going to get this large increase in quota, but they're also going to get this large increase in landings simultaneously with it, but that's not going to be equivalent for all the different parts of the recreational sector, because some of them, like the headboat and the charter, especially the headboat, is caught as a census, and so there may be some differences, some intrasector differences, for the recreational part of the fishery that may be affected in terms of monitoring and also in terms of regulations.

I haven't completely thought through this, but it's not going to be -- For recreational anglers, you get that, okay, the quota is five-times larger for this species, or something like that, but, again, the landings are going to be like that also. They're going to jump up significantly for the private mode, but you're not going to see that increase for headboat and commercial, right, because they are caught -- For headboat and charter, because they are caught -- They are tracked using a different process, and so there may be some impacts there that we haven't fully thought through that the council may have to deal with, especially because they don't separate out these different components of the recreational sector on this council, and so it's just something to -- Again, I would have to think a little bit more about this, but there could be some intrasector impacts with this on the recreational side.

DR. YANDLE: Are you suggesting then that the council may need to start thinking about further sort of sub-regulation with this at the sort of sub-unit level and thinking about these different categories, which previously they have not done?

DR. CROSSON: Yes, and I would think they would have to think this through a bit, because it's possible that this could cause some conflict inside the recreational sector.

DR. SERCHUK: Just to remind folks around the table that, whatever our discussions result in on this particular topic, it will subsequently affect how we treat the next topic on our agenda, which is the revised assessments, because all issues that relate to the use of the new MRIP data are subsumed in those revised assessments. They have gone ahead and used the information as it exists, without any of the caveats or any of the concerns, and so I just want to say that the next topic is related very much to how we resolve our concerns on this particular topic. Thank you.

DR. SEDBERRY: You're right, and we'll be moving on to that shortly, and maybe we should look at our action items here and make sure we have addressed them, and we can come back and address them further based on what we hear with the updated assessments, and so go back to the top there, Mike, and so we've identified a couple of stocks, what we might be interested in with looking at those stocks, source of information, adding the new MRIP calibrations to the terms of reference for future assessments, and, since this is a significant change in the data and the way it's handled, these should not be done as an update.

DR. NESSLAGE: Carolyn is giving me the evil eye on this, but I'm not sure that they shouldn't -- Are you saying that just porgy and black sea bass shouldn't be done as an update, or are you talking about all highly-recreational species shouldn't be done as an update? I don't know, and I'm just thinking about this as a stock assessment person who, if they were tasked to do an update and change nothing else, and you're slapping in the new data, right, and, yes, the magnitude of the estimates will most certainly change, coming out the backend of the assessment, but, unless the model fails to converge or shows poor diagnostics as a result of the new MRIP estimates, what else are you going to do? I guess that's -- In that case, it would be an update, but the answers would be dramatically different, as opposed to a standard, where you can explore alternative treatment of the data, and am I correct in that characterization?

DR. BELCHER: Yes, and my thing was it's just the characterization of what we call the update, because the update basically says we're not changing a data entry stream. We're adding the continuation, and so, for commercial landings, you're just tagging on two or three years to that data, and so MRIP would -- Technically, you would be tagging on two to three years to that data, and you're not wiping a stream and putting a new stream in.

I think it's just the mismatch of saying we're doing an update when really we're actually substituting an entire data stream because there's a change in methodology with it. It would be like re-doing an index of abundance with a different standardization, and that wouldn't be allowed for an update. That would have to wait until a standard to be done.

MR. CARMICHAEL: That's kind of in the gray area, but I think there's a bigger picture that makes all of that kind of moot, because we're moving to the research track and operational assessments, and operational assessments, as I said yesterday, are going to run the gamut from what we now do as an update all the way up to a standard and perhaps even allow you to do more things than what even we've done in the past in a standard.

I think what you will do for the future assessments is you will need to look at them, and, when we do that scope of work, as we did yesterday, and then, as we get into the actual terms of reference, then you will need to specify what you want to do and how you want to handle it, and, you know, this is a chance that you can be out of the box. We can have a workgroup that maybe works on some of these issues in advance, so that it doesn't slow down the overall production of the assessment, once you have the most recent data that you want included, while you work on something that maybe takes a bit more time. I think you can handle all of this within what we're doing within SEDAR, and you don't have to worry about the standard and update semantics.

DR. LI: I mean, depending on how you define update -- To me, an update assessment means either you change the model or you change the way you are handling data, which is the way here, how you are handling input data. You are changing the input data for the model, and I would say that's an update assessment, but, here, in this case, we changed the magnitude. We changed the magnitude of the catch data, and, if we use the same model, it will change the outcome fishing mortality estimate for sure. If we are just adding new years of data for the same model, the same way of handling data, that's more like a continuity run, and is that a term for that?

MR. CARMICHAEL: Just to clarify, when we say the word "continuity", that's referring to just using the exact same model and just new data.

DR. LI: Yes, just adding new years of data.

MR. CARMICHAEL: That's largely what we do now in SEDAR as an update, and that's what that is. When you get into changing the model structure, then that actually would be a benchmark.

DR. LI: Yes.

MR. CARMICHAEL: That's what I was saying, is those words are all going away, and we're going to have the research track, which is going to be very intense and evaluating lots of things.

DR. LI: Yes, that's great. I hate those terms.

MR. CARMICHAEL: Then the operational is going to give you a lot of flexibility to consider some of these other things.

DR. LI: I mean, here, for our notes here, the update, should we change that to like the term that it really means, the continuity run?

MR. CARMICHAEL: I don't think that you probably even need this, because, if you put that bullet, and you said should be done as an operational, then you would be ruling out doing a research track, and there may be a stock for which you need to do a research track, for reasons that are far greater than the MRIP data, and so I don't really see what this does. I mean, if anything, this would be getting at whether or not you think that what was just done for those four stocks, which is the next topic, this revision assessment, which was only updating that MRIP data stream and not advancing the terminal years -- If you're saying that that's not an appropriate route, I think you're premature, because you haven't even looked at those assessments. I don't think that this bullet -- Personally, I don't think this bullet belongs here, and I think you need to continue on the path we have, which is you recommend the type of assessment that needs to be done and you give the details when we talk about each stock, and don't like tie your hands here.

DR. SEDBERRY: Again, maybe moving on to the next agenda topic will help clarify this.

DR. SERCHUK: I would urge us to have a little bit of caution about what we think will be coming out of processes that we haven't implemented yet, and I say this from my understanding of what operational assessments are and what revised assessments are up in the Northeast, and I don't know whether the -- I am sure that we'll have to deal with this in our own way in the SSC, and it often involves different levels of peer review as well, or at least that's the way it is up in the Northeast.

While I'm hopeful that some of the things that we've talked about will come out the way we envision it now, it's likely that they won't. It's likely that we'll have some stumbles and we'll have to revisit the issue again. When it comes to operational assessments and updates, generally those are pushed down to the analyst level, and the review takes place at an SSC level rather than having any intermediate stage, and that's the way it is in New England, and that's part of the rapid passthrough for getting more recent information, but it's not without its difficulties, and so all I'm saying is let's be circumspect about processes that we haven't implemented yet, because we're likely to find a few quirks that need re-adjusting. Thank you.

DR. SEDBERRY: Thank you, Fred. Marcel, did you have something?

DR. REICHERT: Just a quick reminder. What's the timeframe for the research and operational or for the operational assessments to be fully implemented and rolled out?

MR. CARMICHAEL: As I said, in 2020, we are going to start fully using that language.

DR. BUCKEL: I didn't know if you were leaving -- You had mentioned before that you were going to leave this item and go to the next one and then look at this for revised assessments, but, before we did that, the unassessed stocks that we have to come up with this plan for what we're going to do with these new streams, and it looks like there was a discussion of a working group, and do we want to deal with that now or after the --

DR. SEDBERRY: We do want to deal with that now, and so let's take a short break, and then we'll come back and deal with that, and then we'll be ready to move on. How about at ten o'clock we'll start back?

(Whereupon, a recess was taken.)

DR. SEDBERRY: Everybody please take their seats, and then we can get restarted here. Thank you. Before we get restarted, I would like to welcome Jessica McCawley, who has joined us, the Chair of the South Atlantic Council. Welcome. It's good to have you here. Then we are going to talk about the recalibrated MRIP data in relation to ABC recommendations for unassessed stocks. That is our second big action item.

DR. REICHERT: I briefly want to come back to the brief discussion we've had on benchmarks, standards, and updates. I know we are in a transition period, but, as an SSC, we had lengthy discussions about the definitions of those three and which assessments could be done in each of those three frameworks, and so I think it's problematic that we now say, well, let's abandon it unless we say, okay, we are in a transition period, and so, in this transition period, those three types of assessments are -- We don't consider those three assessments in that intermediate period, because I don't think -- I have a hard time not considering what can and cannot be done, for instance, in an update, because we had those discussions in the past, and we had some difficulties when we were reviewing those, in terms of, okay, an assessment gradually moved into an area, where it may not, in retrospect, have -- Or should not, in retrospect, have been approached as an update, for instance.

I just want to bring that up, that perhaps it's good for all of us, on the record, to recognize that in this interim period maybe we shouldn't be considering those, and that frees us up in terms of what we recommend would happen to some of these assessments, and so, anyway, I just wanted to throw that out, because I kind of feel that we are having it both ways, and so I think we should -- It would be good to clarify that.

DR. SEDBERRY: So what is the bottom line there that you're suggesting?

DR. REICHERT: The bottom line is then let's recognize that we are in an interim period between what we have defined in the past as benchmark, standard, and updates, and we are transitioning

into a research and an operational, a system with research and operational, assessments. As John said earlier, that discussion is a moot point, because we are moving towards that, but, right now, we have a hybrid of research and operational, or it seems like it, and still some update, standard, and benchmark assessments.

If we are talking about adding MRIP, in the strict sense of an update, if we are consistent, that should not be done in the framework of an update. If we want to do that, and I assume that there will be more of these analyses coming to us to review, let's say, okay, in this interim period, we are not looking at -- We are abandoning that benchmark, standard, update. Does that make sense, or am I not making any sense?

MR. CARMICHAEL: Well, we are in a transition period, and I think that's what I was trying to say, that we are still using the language of update, standard, benchmark, for now. We plan to abandon that language and move fully into operational and research tracks by 2020. When we talked about planning for the assessments in 2020, we went through the scope of work, and that's part of the transition.

That's part of clarifying how an operational assessment will look and what it will consider and how the role of the SSC in the operational assessments will be clarified through that scope of work, and that will help you, allow you, to define where on the continuum of what used to be update to standard, and the operational will fall, and so we are slowly transitioning this. We know that it's going to be a learning process, and we're going to have to kind of work through it and see how things go.

I think you have -- But you have some assessments that are underway and being completed now that were done under the update rules and instructions, and those are in the works and getting done now. You asked, for some of those assessments, that you have them done as a standard. For the ones that are being done next year, because of issues with this MRIP data, you asked tilefish to be done as a standard, because of the number of things that you wanted to look into, and so I think, as we get into this, and as we look into like -- Spanish is a big recreational fish, and we talked about having a panel and stuff yesterday in the scope of work. When we get to the terms of reference and more define that, that will be a chance for you to maybe expand some on how you would like to see the MRIP data addressed, and that would come as the next step in that program project planning.

DR. SEDBERRY: Thank you, John.

MR. GRIMES: I had spoken to Dr. Reichert out in the hall, and, to put this a little bit in context, and I agree entirely with the point that I think he's trying to make here, but we were, in the last year-and-a-half, sued over the golden tilefish, and that case ended up being dismissed, voluntarily dismissed, by the plaintiffs, but one of the claims they made was that the assessment -- The changes made in the update assessment were inappropriate and they went beyond the agency's established policy.

Now, we have a SEDAR policy and procedure type of manual which lays out the types of assessments and the types of things that can be done. Now, it's not binding law on us, necessarily, and certainly that's what we were going to argue in that case, but we are not acting entirely consistent with what's in that manual now, and it does place some limits on changes that should

be made in update assessments, and we appear to be transitioning away from that, but I think what he was seeking to do, and what I think is a good idea, is just making it clear that we're not really following that anymore.

We are transitioning to this approach, which I think you have discussed earlier, the research track and new labels and what you can do in these various types of assessments, but I think it's good to be clear about that. It's not the responsibility of this body, or even just the South Atlantic, but we need to get that SEDAR manual in line with what we're actually doing or intending to do in the future.

MR. CARMICHAEL: Yes, and the SEDAR Steering Committee is fully aware of that. In fact, when they first started talking about this, there was discussion of trying to get preliminary changes considered in the SEDAR SOPPs as we dealt with this. Now, the difficulty that arose, and you guys that have been sitting around this table a while realize, is it took a number of years just to get the basic concept of what a research track would mean even worked out, and so that's one of the reasons that SEDAR did not go down the path of updating those SOPPs and including these kinds of things, because we felt like there was so much uncertainty, and I think that uncertainty is still there, particularly as we get into how we best deal with these operational assessments.

Like the scope of work that I talked about, that was something that just arose as an idea at the May meeting, and then it was clarified a bit at the end of September meeting, just three weeks ago, and so this stuff is evolving pretty quick, and so we're undoubtedly in a transition, but the Steering Committee is certainly aware of the need to lay out what exactly a research track means and what an operational means, but with the understanding that we don't want to tie the hands of the SSCs and the cooperators or the Science Center in terms of meeting the ultimate goal, which is to get assessments done, and so we're trying to make sure the process doesn't stand in the way.

One of the things that I think will be paramount to this is what always existed before, was that, in the event of some gray area between whether something is allowed in an update or a standard, it was always recognized that you, the SSC, are the ones who are expected to clarify that gray area. You have always been told that, if you think changes are beyond what can be done with a standard, then ask for a benchmark. If you think that things should be changed, and you want to allow them to be changed in an update, then it's up to you to say that, and, when you get the assessment, you could always say, you know, that went across the line, and this should have been done another way.

I think that fundamental idea will continue to prevail as we get into the operational, and that's where your role in approving terms of reference and looking at the scope of work and talking about how the project is going to proceed will probably become even more important.

DR. BELCHER: I agree with that. The thing that I am -- Right now, with the update aspect of it, is the terms of reference. For those things that we have already said are updates at previous meetings that are in the queue, before we had the MRIP rollout, we may not have put anything in there about needing to make sure there is appropriate terms of reference that are addressing the MRIP, the old versus the new and the impacts that that's having, because that's not part of what a traditional update would do, but yet, as we discussed yesterday with putting in a TOR to address certain needs, I just want to make sure that we're -- Across all of our updates that that's the case, that we're doing that the same way, because, to me, this is a very different step.

I understand that the MRIP is a data stream, but it's not the same thing as commercial landings. For commercial landings, you have a fudge factor, because reports get corrected, and you get reports that come in, and they're not making dynamic swings the way that some of these species of MRIP are making huge swings, and you're expunging, or redacting, an entire line of data to put in a brand new line of data that are being treated like a commercial landing, but it's actually a methodology change that is causing those numbers to change.

To me, they are two different -- Understanding that, yes, we'll accept changes to commercial data, because of the essence of that data, but this is a very different step for us, because it's a complete methodology change. It's no different than adding a new index of abundance at that point or changing out an approach to an index of abundance. If somebody says, well, we went from delta-GLM to the zero-inflated negative binomial, would we allow that to happen as an update?

MR. CARMICHAEL: I mean, I see that a little different, because the MRIP is a data source that's done and evaluated at a national level and is made available to those doing stock assessments and the councils saying this is the best data. They went through the peer review process, and it's not a matter, I don't think, of just striking one out and putting in another, but it went through a pretty exhaustive process, and I think that's something we're going to have to face, and then I think the question arises of an assessment with the old data and an assessment with the new data.

If you think that the assessment with the old data is preferable and for some reason you're thinking the old data is preferable to the new data series, I think we have to be careful with that, right? We can't just assume that we're going to go back to that. Now, I think the assessments that you guys have underway now, going back to what Fred said yesterday about illustrating the impact of the changes in the MRIP data, that can be something that you guys could make as a recommendation, that, for the assessments that are going to include the new MRIP data, to illustrate what impact that new data has on the results of the assessment, and that would be a term of reference that you could add and have that done for these assessments.

DR. BELCHER: Yes, and that's exactly where I was going with that, is that currently the update doesn't have that expectation. It's updating the data stream and running it forward. You're not doing -- That was my point. I am not looking to say pick old versus new, but the dynamic of old and new and how you're doing that is where I think we at least need to be sensitive to, and, I mean, there's a reason why they're producing both streams of numbers.

Every one of us that go in and look at the MRIP numbers right now, you look at old method and new method. I just feel like we should put that diligence to it if we're going to update that stream, so that people do understand and see that, where the update normally wouldn't have that built in, and the consistency of the TORs is what I'm arguing for relative to the phase-out of an update.

MR. CARMICHAEL: That's what we talked about yesterday with TORs, and I think, on tilefish, you decided not to add that TOR. On snowy, it's something that you said that maybe you would add, and you would look through these, and we have porgy and amberjack underway, and I don't know how adding something like that after the fact would affect the progress of those projects, and, without Erik here, it's kind of hard, and maybe he can send us some comments on that, if he's still out there listening to this, about how effective and practical it is to do that, but I think focusing

in on an evaluation of how the changes in MRIP data have affected the outcomes is the right way to go about it.

DR. SEDBERRY: Genny is going to un-muddle us here.

DR. NESSLAGE: I like to muddle things. How many updates do we have coming up between now and 2020?

MS. BYRD: Snowy grouper.

DR. NESSLAGE: So we're talking about snowy?

MR. CARMICHAEL: Snowy is the only one that is scheduled to be an update, and then you have red porgy and greater amberjack, and both of those are standards that are underway.

MS. BYRD: (Ms. Byrd's comment is not audible on the recording.)

DR. NESSLAGE: So we're just talking about snowy here.

MR. CARMICHAEL: Yes, snowy, which was being done as an update, and there was discussion at one point -- You said that everything including the new MRIP data should be done as a standard, and then there was discussion about snowy and timing and the relatively low catches, and you decided, well, go ahead and just do that one as an update, and so we have had this discussion, as I recall, at the last several meetings, as we've been aware of this MRIP data coming and assessment progress and plans marching along simultaneously, and so we have had a lot of discussions about incorporating this revised data into the different assessments.

DR. SEDBERRY: Go ahead, to that point.

DR. NESSLAGE: I would just say that I would agree with Shep and Marcel and Carolyn's concerns that, as we move forward, we need to be very careful about our updates, having learned from the golden tilefish example, and that perhaps we have some guidance for what a high or low-recreational species is, and none of the high-recreational species should be updates, because, even though you say the transition will happen in 2020, things don't always go according to planned, and so we might want to be prepared for that.

MR. GRIMES: As I understand it, your next agenda item is looking at update assessments for three species that have plugged in these new numbers, and maybe this is a cart-and-horse kind of thing and you could come back and revisit this after you see the ramifications of just plugging in those numbers.

MR. CARMICHAEL: But they are revision assessments, for the record, and not updates. They didn't advance any of the terminal years, and so they applied the new data, because we get sued over all this stuff, and we were very careful in selecting that word five years ago, when we knew this problem was coming, and to distinguish these from updates, which has a meaning.

These were revisions, and the stocks that were selected for the South Atlantic -- One of the reasons that these were selected is because they have been done relatively recently, and the thought was

that these made sense to just revise that data series once it became available without advancing the terminal year. We can't update everything and advance terminal years all at once, but we also know, as the MRIP changes over to this new methodology, and they're not going to provide the old-style estimates available, and they're not readily available, and they're not going to be readily available in the future, that we're going to have to get oranges-and-oranges in our ACL monitoring.

Now MRIP is doing this new way, and this is ACL monitoring in the future, and MRIP -- If you look at the transition plan, it was hoped that we would be updating ABCs now and updating ACLs now and have ACLs with the revised data in place in 2019, and I think we all know that that's not really going to be happening, and we're going to have to hind-cast this stuff even further, but, yes, that's kind of the plan that we're dealing with here.

MR. GRIMES: I think what Dr. Reichert is going to say is -- You just said, well, but an update assessment is an update assessment, and it has a specific meaning, but we've just been saying that we're not following that, right, and so you're going to rely on it to constrain you in one context and not another, and that is problematic, from my perspective.

MR. CARMICHAEL: I'm sure I'm not going to win a war of semantics with a lawyer, but the Steering Committee did choose the word "revision" very carefully, and the update does have meaning, and it does have rules, but, this being fisheries, yes, this group has the ultimate final say, but remember these are revisions, and don't think that you advanced any terminal years, if that affects your thoughts.

DR. SEDBERRY: Okay, and so are we ready for Erik, or do we still have --

DR. REICHERT: We still have a number of things to talk about.

DR. SEDBERRY: Okay, and so, updating the ABC recommendations for unassessed stocks, just the procedure.

DR. REICHERT: I think this was -- I am not sure who brought it up, but this may be something that would be good for a working group framework. I think, if I remember correctly, that's what we did originally, or perhaps we did it as an SSC as a whole, and I tried to look back, and I think it was April of 2011 when we went through all of these unassessed stocks and used the -- Decided on the 1999 to 2008 timeframe, and we went through a bunch of stocks, and so it may be good to revisit that and see if and how we should adjust that. I asked John -- I don't believe we have revisited those recommendations since April of 2011, and maybe with the exceptions of a few stocks that either were assessed or something was happening.

DR. ERRIGO: Back then, that was pre-ORCS, and so everything was done via decision tree, and, when ORCS came out, all those stocks that fit into the ORCS process were redone with ORCS, and then all the rest stayed via decision tree.

DR. REICHERT: Thanks for that reminder, Mike.

DR. BELCHER: I am going to ask a really vague question of then why change the procedure? Inherent to the procedural aspects of ORCS and that kind of thing, what has changed in the

approach of -- That procedurally we would need to adapt, and I guess that's kind of the question that I have, was what would be the need and trigger?

DR. BUCKEL: If you scroll up in the roadmap, there is some points that I'm not sure that council staff put in there. To Carolyn's point, there is some questions that we would have to -- Either a workgroup or the whole SSC, and so like the reference period I think is going to be key, because of -- Then the other points there, and so it seems to me that the whole SSC, and maybe some folks involved in the fishery, that it would be good to have them to do this right, instead of a workgroup with just three to five members, but my vote would be for a full SSC meeting to try to tackle this.

DR. REICHERT: That was one of the points that I was going to make in reply to Carolyn's question, I think that whether that time period is still appropriate, and that may change a little bit, and Jeff made the other points.

DR. BELCHER: My big thing is -- I think that Marcel's approach with using a working group is probably a good solution, because, sometimes with these questions, I always get nervous, because I feel like we get extremely quick and dirty and dismissive with it, when it's something that we should probably roll up our sleeves and get a little bit more into the detail than to say discuss the procedure. Well, I think there's more detail in that that we really -- Like we did a half-day workshop when we were sitting down and going through all those species, and so I think that we would be better suited to have more than just thirty-five or forty minutes to talk about it.

DR. REICHERT: It may be good to include in that how potentially our new ABC control rule may affect those decisions. We'll be talking about the ABC control rule later in this meeting, but I think, if we do a working group, I think that I would recommend that that would potentially be one of the terms of reference to look at.

DR. SEDBERRY: Does the committee as a whole agree that a working group should be formed to address the unassessed stocks?

DR. BELCHER: Even a full SSC discussion for a half-day -- Like I said, we did that before with those stocks, and that wasn't just a working group. That was a half-day pre-meeting to the SSC meeting when we did it that one time.

DR. REICHERT: You mean get some preparatory work done by a working group and then add that as a workshop to an SSC meeting? I like that idea.

DR. WILLIAMS: Something to bring up here, because this is an issue that is sort of layered with concern for the Science Center, and that is -- One thing to recognize is that, when the SSC originally set up these ABCs for unassessed stocks, they sort of, in a way, transitioned to a new role for the SSC, and that was the actual conducting of science, in a way, because there was no science that was provided to support you guys with choosing an ABC. You actually just used a method and came up with the ABC. In some ways, that's a bit of a change for the role, and I would argue that the Science Center needs to play a role in that.

The other reason I say that the Science Center needs to play a role in that is that the method that was used -- Since that time, there have been papers that have come out that suggest that, in some cases, we used like the third-highest catch and that that is not a desirable method to use for data-

limited species, and so I would make the case that, whatever process you guys want to do, that you try to get the Science Center involved, if for no other reason than because we're going to be the final review of this -- If it makes it to an amendment, we're going to have to certify it as based on best science, and, if you were to re-do exactly what you did before, I think the Center would have a tough time certifying that as the best available science at this point, given some of the literature that has come out on these data-limited methods.

DR. SEDBERRY: Thanks, Erik. Good point.

DR. REICHERT: I agree, and I think that the workgroup approach allows us to fully engage the Science Center in that process, and so I agree, and I think that would be extremely helpful for us, for the committee.

DR. SEDBERRY: So we need to form a workgroup that would meet by webinar, presumably, between now and our spring committee meeting, and is that right?

DR. REICHERT: I am thinking about the timeframe, and I probably need some guidance from Mike or John or others in terms of when this needs to be completed, especially if the ABC control rule is going to be a part of this discussion. Then that may dictate, perhaps, what we -- What the timeframe is for this working group, and I'm not sure.

MR. CARMICHAEL: The revised ABC control rule amendment is now scheduled to be approved by the council at the end of 2019, in December, and so it wouldn't go into effect until sometime in 2020, and so I think the intent is that it would be good to try and get ABCs for the data-limited stocks at least, using the existing control rule in place, if we could, because, otherwise, we have even more delay, because you have to get the control rule in place, and then you have to go through the application of it and all that and more rulemaking, et cetera, to actually get the ABCs into place, and so it could be longer before you're applying that for these data-limited stocks. I think, if you guys could maybe have a workshop at the spring meeting to consider applying the existing control rule to the revised data, we would probably be in good shape.

DR. REICHERT: Okay, and so then, to the last point, to involve the Science Center, there may be some limitations in timing on their participation there too, and so -- Erik, I'm not sure if you can speak to the timing of this and whether a spring timeframe, spring SSC meeting timeframe, would be workable for you guys.

DR. WILLIAMS: We will work around whatever timeframe works for you guys. I will figure out participants that we can get involved in the process, and so don't worry about us being a constraint on that.

DR. REICHERT: Okay. Thanks.

DR. SEDBERRY: Thank you, Erik.

MR. GRIMES: I want to make sure that I'm clear on this and make a point that -- Dr. Williams said there will be issues with following the same approach for unassessed stocks if we were just to do what we did before, and that is effectively what is in the control rule now, correct, and so, if he said there would be problems with them certifying as best available scientific information

following that approach, then that is not going to bode well for trying to just run these numbers through our existing control rule. We would need to develop some new approach, or at least address the concerns that the Science Center has based on new literature, and so I guess I will further muddle things with that and ask you to keep that in your minds as we work through it.

MR. CARMICHAEL: Yes, that is an interesting wrinkle, because I think the control rule does say about using the third-highest, right, and so what happens when the science has changed and now that's no longer considered best science? Do we just keep our existing ABCs in place and MRIP and the Center under the continued burden to back-check MRIP estimates until we get the new control rule in place and then apply it? Is that what we need to do to comply with the Act?

DR. REICHERT: Well, under our current ABC control rule, is there a provision that we can deviate from our ABC control rule, and so that may --

MR. CARMICHAEL: Yes.

DR. REICHERT: That may be the way to approach this.

MR. CARMICHAEL: There is definitely a provision that you can deviate from the control rule.

MR. GRIMES: Sorry for all this, but my thinking was that your workgroup or whatever you're going to form to look at this, that will develop whatever, and maybe it is more of an interim approach, but whatever that group is going to do, whatever decision they will make, that seems to me will necessarily feed into the development of the new ABC control rule, and so these things are working in concert, sort of, and I don't know -- On one hand, maybe you could say that, no, we're not going to do anything and we're going to develop a control rule and we're going to make these sort of generic decisions and then we're going to apply those decisions to the specific information for these unassessed stocks, or you can work through the unassessed stocks and relying on the provision in your current control rule that you can vary from it, and explain why you're varying, and then work through that process and see how it works, and then that would feed into the control rule. I don't know which is better, and my guess is it's probably better to -- Maybe it's just my personal view of it, but applying it in some real-life circumstances to real species and real fisheries and see how that works and see what problems arise and use that to inform your general or generic decisions in the ABC control rule revision.

MR. CARMICHAEL: Yes, I agree with you on that, because -- You probably remember this too, but the changes in the ABC control rule are not changing the data-limited stocks foundation, and it still has that third-highest in there as something that could be done for data-limited stocks, and so now, if that is conceptually perhaps not best scientific information available, then we're going to have some work to do on that part too and have to figure out what is best scientific information available.

I can see maybe some discussion by this committee, perhaps at the spring meeting, with the Science Center involved too, on, okay, so what are these alternatives and what are the concerns with third-highest and what are some alternatives for a catch statistic that would be appropriate, because that needs to make its way into that ABC control rule.

DR. BELCHER: I guess that was kind of the next question that I was going to ask, because it's interesting to note that we're developing the rule, but, somewhere, BSIA is being applied, and yet this is the first we've heard about the issue with the third-highest, and so I guess I just kind of have to question -- You know, we're putting together -- Everybody is putting their thinking caps on to come up with this control rule, but yet, what we consider BSIA, the Science Center could turn around and tell us it's not.

MR. CARMICHAEL: Well, yes, it's always up to the agency to say what BSIA is. We make recommendations, and so, yes, they could.

DR. BELCHER: The blood, sweat, and tears is what I'm thinking about. It's how many years we've been working on this, and we've gone through a lot of iterations, and understanding that it's a dynamic document, but I think that's one of the frustrating aspects, is to know that we can still be told it's not a good enough attempt.

DR. REICHERT: It wasn't to that point, but, to what John said, if we do this in the spring, in terms of the timeframe for the new ABC control rule, that would be in time -- For instance, if this is an issue, that would be in time to include potential adjusted recommendations in that new ABC control rule, correct?

MR. CARMICHAEL: Yes, that is correct.

DR. REICHERT: If I look at the timeframe, this October of next year is the last time we will see the ABC control rule before approval, correct?

MR. CARMICHAEL: Well, yes. If it's approved in December, then you would see it in October with all the public hearing comments and stuff at that time. One of the things we're waiting on is guidance from NMFS on carryover and phase-in, which is expected in January, and so we're holding off on finalizing the wording of alternatives until March.

Now, with this rearing its head, we may have to shift everything on the control rule a meeting, because we may not be able to finalize the real changes we're making in the basic application of the rule, because of -- As I said, we're not changing that third-highest as the catch metric for unassessed stocks, but, if we have to change that, that's some more, and so we have to have your consultation on that, and so it may be that -- If we can come up with an alternative statistic, or an alternative set of language, that will deal with that that you guys can agree on at the spring meeting, then we could have the council approve the language in June.

Maybe we only slip another meeting, but I don't see how we go forward with the control rule with that language if the Science Center is raising concerns that it's not best science, because, if it doesn't come up now, it's going to come up in review, and I would rather go back to the drawing board now than after I've done public hearings, and so let's do what we have to do, and I think that now needs to be an important topic for our spring meeting, what is an appropriate catch statistic, and I think that should be added to the bullets for this group, as another bullet, what is an appropriate catch statistic for these unassessed stocks if the third-highest is suspect.

DR. ERRIGO: So this is for decision tree stocks. Are there any issues with the ORCS approach or the statistics used for the ORCS approach, or are we good there? That used the highest landings and then scaled that.

MR. CARMICHAEL: Erik, have you guys pondered that any as an alternative to the third-highest? It's okay if you say, no, you haven't really thought about that. I don't want to put you on the spot.

DR. WILLIAMS: We haven't. The issue all comes -- I mean, you guys had a presentation from Dr. Caruthers many years back, where they investigated a lot of these data-limited methods, and that is when it was made clear that the third-highest was one of the worst-performing among those suite of options, and I would say we can go back to that paper, because there was quite a few suite of options within his analysis, and draw from that, and that's basically where the main concerns from the Science Center are coming from, is the results of that analysis that Caruthers did.

MR. CARMICHAEL: Okay. Thanks. I remember that, and, as I recall, one of the concerns that was raised was that the analysis assumed that the third-highest was landed year in and year out, and the SSC discussion was always the third-highest being viewed as a limit and not expecting that the average would change appreciably, and I think that would be something we should do for this workgroup, is see how that assumption panned out, because it is very -- The critical part of those evaluations, of course, is how much is actually landed, and so I was just thinking, during this, that it would be interesting to see if our thoughts on how the third-highest as a limit would play out in terms of actual average landings, if our assumption was right or if indeed we are approaching catching the third-highest year in and year out, in which case the Caruthers approach is spot-on, and, yes, that is risky.

That is going to really come down to answering the question for us, and so, yes, we definitely need to look at that, and I think we have a lot of references on that. We can look back at the Caruthers, and the workgroup will have to dig into that and look at the performance of the third-highest in real terms, and so it should be a fun winter and spring.

DR. REICHERT: I agree with that.

DR. SEDBERRY: Now we're looking for people for the working group.

DR. BELCHER: I have been here pretty much since the birth for this thing, and so --

DR. REICHERT: I don't want to put people on the spot, but we had an ABC Control Rule Working Group, and so it may be good to look at those people, because, as Carolyn said, a lot of those folks have been part of that, although I look around the room, and several of those are no longer a member of our SSC, but that may be something to take a look at, too.

I just want to throw that out, but, within the working group framework, we have the option to ask if we can invite folks outside the SSC, and so maybe it would be good to look at that list of former SSC members that were involved in that process and see if it would be good and if they would be willing to participate in this process, and it's just a suggestion that I have.

Steve Cadrin was one of them that comes to mind, plus what we did when we were discussing this on previous occasions is -- I thought it was always very helpful to see what was happening within

the surrounding SSCs, and so perhaps Luiz can give us some input in terms of what is happening in the Gulf of Mexico SSC, and it would be good to see what's happening, for instance, in the Mid-Atlantic, also, and so that's just some suggestions that I have, in addition to participation by the Science Center.

DR. SEDBERRY: Yes, and we can look at the list, and maybe John Boreman could help us out there with the Mid-Atlantic perspective, and Erik can make some suggestions about Center participation.

DR. BELCHER: I would like to -- Of course, Erik is on there, but Erik was another one that was there at the delivery of the ABC control rule's birth, and so, to the degree I know he's got a different role and all that, but Erik has as much institutional knowledge of that development as any of us do.

DR. SEDBERRY: Any other suggestions for the working group? Is anyone else interested in participating? Thank you, Jeff. Eric Johnson. The thinking is that we would have an initial meeting of this group via webinar and then a half-day at our spring SSC meeting. Okay.

DR. BUCKEL: One other thing to add to the charge, and I'm not sure if it's for the workgroup or when we meet in the spring as a full SSC, but the point that Gregg brought up about the variance in the estimates, and this is going to be dealing with the mean estimate, but the variance and how that comes into triggering. If it's a high-variance species, then there may be a greater buffer, et cetera, and so I don't think that language was up there, and we also need to decide if that's going to be something the workgroup tackles or the SSC.

DR. REICHERT: I'm not sure if this is part of this process, but obviously one of the things the council is also looking at is how ACLs can be tracked, but that may be a different question or approach, and I'm not sure -- I don't think that's a discussion that should enter our approach to setting ABCs, and so I will keep that for later.

DR. SEDBERRY: But that was certainly something that Gregg mentioned early on in our discussions this morning about advice that the council would want, would be advice for tracking the ABC, or the ACL.

DR. REICHERT: The reason I was thinking about it in this framework is because of the way we determine an ABC may have some bearing on how that potentially can be tracked.

DR. BELCHER: John, is it a possibility for us to revisit some of these as ecosystem component species again? I know we kind of hit a wall at one point, but it's been so long since we've had that discussion. With some of these ones that you have a huge degree of variation, and landings are low, rare occurrences, do we have those discussions, or is there something we can get for information on how we can approach whether or not we can start to exclude some of these lesser species?

DR. ERRIGO: Yes, that is something that the SSC can discuss during these meetings and discussions.

DR. SEDBERRY: Do we have any unaddressed actions that we need to talk about that we definitely won't come back to during the assessment revisions discussion? Again, I'm sure that some of these things will come up again.

DR. ERRIGO: I think we're good, but just as long as we remember, as we are doing up the report -- Well, someone needs to be the workgroup leader, and that person will have to take responsibility for making up the charge of the -- We will have to draft terms of reference and things like that.

DR. SEDBERRY: Do we have a volunteer to be the workgroup leader? Maybe we can address that via email, and make sure that makes it into the notes of it, so that we won't forget it. All right. Are we ready for Erik, and is Erik ready for us?

DR. WILLIAMS: I'm ready to go when you are.

DR. SEDBERRY: Okay, and so this is likely to be a long item here, but this is Agenda Item Number 8, with Attachments 15 and 16. Erik Williams from the Center is going to give us the revision assessments overview.

MRIP ASSESSMENT REVISIONS

DR. WILLIAMS: We did what John carefully described as revision assessments, which is defined, in this case, as just taking what we had as the most recent assessment for these species and updating only the MRIP components of landings and discards. The species that were chosen, which was chosen by the SEDAR Steering Committee, largely, were chosen because they were just the most recent assessments we had done, and they had some potential for effects from the changes in recreational catch, and so that's why they were chosen.

The data, obviously the new MRIP data rolled out in July of this year, and, within that, and Mike Errigo went over this largely, but landings, discards, and effort all changed, and it was a transition basically from the Coastal Household Telephone Survey to the Fishing Effort Survey, a mail survey, and the old method -- If you go to the MRIP website and query the data, you will see that ACAL is one of the acronyms that they use, which is the APAIS-calibrated data, and FCAL is the new method, the FES-calibrated data, and that's what we worked with for these revisions. We basically pulled from the website the ratio of FCAL to ACAL and created the vector for all years and then just simply applied that to our current stock assessments, and that was based on a query for the South Atlantic region.

The reason we did this, just to get into the really nitty-gritty nuts and bolts, is, oftentimes, for various species, we have to get even into further divisions of the data, like Monroe County, and even almost down to the county level of dividing the stock up. In this case, we didn't do that, because that just would have been too time consuming, and so we just assumed that this FCAL to ACAL adjustment vector was going to be close enough to just apply to the whole time series, and a further complication, as I have a note there at the very bottom of the slide, is that we didn't have a direct FCAL to ACAL vector for blueline tilefish, and so we actually borrowed it from snowy grouper and tilefish, and red porgy actually, for discards, and so we just sort of borrowed for deepwater species.

We basically had the MRIP landings and discards basically increase for all species, as Mike was showing, varying degrees of increase, but pretty much across-the-board it was always an increase. Shore modes had a bigger increase compared to private boat, and also there was this time trend that Mike Errigo talked about earlier.

In the stock assessment, we have some data that we took back before 1981, which is pre-MRIP, and we just applied the same method that was done in the original stock assessment to cast that back in time. The other thing to note is that, in every measure, no matter how you look at this, this new MRIP data is better, by every measure, and so it's not something where really we should be thinking about should we consider the old estimate, because the old estimate is pretty much defunct. The new data is better by pretty much every measure.

I am going to go through quickly -- The report has more detail, but I was just going to go through each of the species, and there is two slides for each one. One is a graphical presentation of sort of the time series of spawning stock biomass and recruits and fishing mortality and a lot of the metrics we care about, and then the second slide for each species will just be a table of sort of the benchmark output, but, if we look at black sea bass first, you can see the main effect here was biomass was increased, as you can see in that top-left figure. The spawning stock biomass is just shifted upward.

The other thing to note is, in order to, obviously, increase that biomass, we had to see a concomitant increase in recruitment, which we see in the figure just below that, but, as a result, and partly because of the time trend in the data, what we also saw was a worsening of the stock status, and so that is shown in the bottom-right panel and the one just above it, where we can see stock status went from not overfished to just barely overfished, and overfishing went from not overfishing to overfishing.

Here is just sort of a table to look at the comparison of some of the metrics. In parentheses, in gray, is the previous, the old, assessment. Then in the solid black, or the more bold, is the current estimate from this revision analysis, and, if you go right down to the bottom of the table, you can see the stock status change. We went from 0.64 for F over FMSY to 1.4, and, for SSB over MSST, we went from 1.15 to 0.98, and so the stock status flipped for both metrics for black sea bass.

Blueline tilefish, there's not nearly as much effect on the assessment, in part because the recreational fishing is a small portion of the total landings for this species, and so this is more or less what we would expect for a deepwater species that doesn't have a really heavy recreational component. Nonetheless, we still saw some changes. Again, zeroing in right on the bottom part, you can see that, previously, we were not overfishing, but then it went from 0.92 to 1.44, and now the stock is overfishing. Stock status is still suggesting it's not overfished still, but the status got a little worse.

Now, that was for the area south of Cape Hatteras. For those who recall, blueline tilefish got messy, and we ended up dividing it at Hatteras, and, north of Hatteras, we had pretty much just data-poor methods to rely on, and so this is just a summary of the TACs that come out of the DLM methods that were used in the original assessment, and this is just showing them for the updated assessment, or the revision assessment, with the new MRIP numbers, and so, again, looking at that last column to the right, in parentheses is the old estimates, and the black number is the new estimates, and so you can see just a slight change. It wasn't a terrible change, again, because the

recreational component is kind of a small component compared to the total overall removals for those species.

Red grouper, again, we see similar effects. The biomass increased, and the recruitment increased, and stock status worsened. This stock was already overfished and overfishing, and the status just got worse with this MRIP revision. If we go to the table, you can see that on the next slide. Again, drawing your attention down to the bottom three lines, you can see we were already overfishing at one-and-a-half-times, and now it's suggesting that we're overfishing at more than three-times, and stock status has gone from 38 percent of MSST down to 25 percent of MSST.

Vermilion, vermilion had a little bit less effect compared to black sea bass and black grouper, and, again, that's owing to basically the ratio of commercial to recreational landings. In this case, there's a fair amount of commercial landings for vermilion, and it's one of our more important commercial species, but, again, the same effect. In general, we saw a little bit of an increase in the biomass, increased recruitment, and a little bit of a worsening of the stock status. Again, drawing your attention to the bottom of the table, you can see that stock status went from -- I'm glad we have that out to three decimal places. We went from 0.6 for F over FMSY to 0.85, and then SSB over MSST went from 1.5 down to 1.38, or 1.4.

Basically, in summary, basically, across-the-board, we saw increased biomass estimates and recruitment estimates for all species as a result of this, basically because we increased total removals. The degree of that increase is obviously dependent on the degree of increased removals, and it's largely due to whether it's predominantly a recreational fishery or not. As a result of the increased biomass and recruitment, we also see increased MSY values for all the species, but I think, largely because of that time trend that we see roughly from about 2000 on, we also saw a worsening of stock status for all the species, and so increased F over FMSY values and decreased spawning stock biomass over MSST values.

In the report, and I didn't put it in this presentation, are the revised projections, basically in tables, that were used for the original ABC advice. They are in that report, but, obviously, one of the things to consider here also is that we've had a stock status change for a couple of the species, and so that has some impacts on how we move forward with ABC advice. I think that was it, and so I'll take questions.

DR. SEDBERRY: Thank you, Erik. At this time, we can take clarifying questions, and then we'll have public comment, if there is any, and then we'll talk about the discussion, whether we want to do that before or after lunch, and so are there any clarifying questions?

DR. SCHARF: Erik, for all of the species, you see the effects of the MRIP changes in the biomass across the time series, but you really only see the effects on the harvest rate at the very end of the time series, and that's true even for vermilion snapper, which is largely commercial, and so can you talk a little bit about how you interpret that?

DR. WILLIAMS: Yes, and so I think, if we had just had a flat percentage increase across all years, one number that increased recreational landings, what we would expect to see from an analysis like that is just a simple increase in biomass and recruitment and MSY, but Fs would actually remain the same.

They wouldn't be changed, but the fact that we're seeing this difference at the end of the time series is almost certainly almost all due to that time trend in the changes in the catches in the MRIP revisions, and so that increasing adjustment over time, especially as we get towards the end of the time series, it really ramps up a little bit for some of those species in those last two or three years, and especially discards, and that's why we're seeing the difference really at the end of the time series. All else being equal, if it was just a flat increase, we wouldn't expect to see a change in F at all.

DR. SEDBERRY: Any other questions?

DR. REICHERT: Erik, in the report, you mentioned that the diagnostics were -- Let me look up the language. The model diagnostics were good, and can you comment a little bit on whether or not -- How the fact that only the recreational landings streams were updated and how that may affect how the model behaved and whether that would -- What the effect of that is on the uncertainty, and do you know what I'm trying to say here?

DR. WILLIAMS: Yes, I think this gets back to a little bit of my answer that I had to Fred's question, and that is that this is just a scalar, in a sense. The thing that causes a little complication is the scalar is uneven with time, and so that's what then causes this change in stock status, but, all else being equal, yes, the fits didn't change hardly at all to the other data sources, because it's just a scalar.

What the assessment is doing internally is just you give it more landings and it says there must have been more recruitment to explain those landings at the same F value, because that's what it's -- That whole scaling of how high F is relative to stock status, that occurs in large part because of CPUE indices and the balance between removals and changes in stock status, or changes in population abundance, as we see in the indices, and so that's what sort of narrows the assessment model into whether fishing is perceived in the model as too high or too low, and that doesn't get affected by just the scalar and the landings. What that gets affected by is mostly if there was a change in the indices. Then we might see that, but, because this is just a scalar and landings, it didn't affect any other diagnostics, really.

DR. REICHERT: Thanks.

DR. NESSLAGE: Erik, I was looking at the comparison of the MRIP landings for blueline, and there wasn't a big difference that would indicate a change in trend, and so I'm curious why you think there is that dip in biomass, that kind of sharp dip in biomass, at the end of these estimates for blueline.

DR. WILLIAMS: I could actually go next door and drag Nikolai into my office, and he would probably better be able to explain than I would. I mean, I think we've looked at that, and it just sort of fell out that way. I could pull him in here, if you guys have a few minutes.

DR. ERRIGO: You mentioned that, for blueline, you didn't use the blueline data itself, and you used snowy and tilefish to estimate the -- Could that have something to do with maybe --

DR. WILLIAMS: It might have, yes. I mean, I would have to look at the adjustment vector and see if there was a particular upturn in those last couple of years, and there might have been, and maybe that's driving it as well.

DR. SEDBERRY: Fred, did you have a question?

DR. SERCHUK: I had a question, but I don't know whether it's relevant now or to our discussion afterwards, and it relates back to -- I know that what's been done on these revised assessments is exactly what was done in terms of the other previous assessments, except for adding the MRIP data, but, when I was reviewing these results, particularly with relationship to the status determination criteria, which is one thing we were focused on in this report, some strange things -- Well, some things that were apparent in the past now became even more apparent to me.

One is that we use a point estimate for spawning stock biomass in the most recent year, but we use a three-year average for the F values, and, in a couple of cases, if we use a three-year average for SSB, we would not be in an overfished condition, and I am just asking the committee if they can recollect why they used a point estimate for overfished but used a three-year average for overfishing.

It seems to me, if you're in an analytical assessment, the Fs that you're going to be generating in the most recent years are often the most uncertain, and so you take an average for that, but those Fs still affect the SSBs, in many cases, and so I am concerned about the changes in status determination, particularly when we have a trend.

For example, if you go to blueline, just as an example, on Figure 4.1, you can see that what's affecting the overfishing status is we've had this very high point three years ago, but, had you used the most recent two estimates, you would be -- You would have a different view of this stock, and, again, maybe this is more of the discussion, but I would like to know the basis for it or whether we should re-examine our basis in the future. Thank you, Chair.

DR. WILLIAMS: I will go ahead and answer that, in part, just to give a history on why we do that. In general, for most of our stocks, and we can even see it here, we have more year-to-year fluctuations in F than we do in biomass, and that's really -- All it boils down to is to avoid having the assessment happen to occur in some terminal year where the F may have spiked up or spiked down, and we want to use a three-year average for F, whereas biomass tends to be a little more smooth, although, in this case, it's a little suspect, perhaps, because it does go through more of a rapid change than we've seen in the history of the biomass time series, but that's the general reason. That's the general thinking of why we are at this point where we use a three-year average for F and only the single point estimate for biomass.

DR. SEDBERRY: Thank you, Erik.

DR. ERRIGO: I also remember, at one point, we examined the retrospective patterns in F at SSB, and the F values were much more susceptible to retrospective patterns in the terminal year, and so, as you peel back, the terminal F estimate would change quite dramatically, because we didn't have any information to inform the terminal F, whereas the terminal SSB estimates didn't fluctuate nearly as much or to the scale that the terminal F values did. It's similar to the explanation that Erik gave, where they are much more consistent, basically, than the F values.

DR. SERCHUK: Okay. I have a better understanding of it, but, when you have a trend, where the last three points go from a very high value to very low values, and the most recent two values are very low, it's being affected by something that has happened in the distant past, and I don't think that's representative, particularly if you have a sharp trend, of the current condition, and so I'm looking for a little bit more flexibility, based on examining what the -- Whether you have a trend or you don't have a trend, particularly because it's an on/off switch in terms of status determination.

If you are overfishing, you then have to institute a rebuilding -- You have to do something to reduce F, and it's the same thing with biomass. If you fall below the threshold, it's a rebuilding plan already, and so we want to make sure that it's really reflective of current conditions and not being affected by an outlier three years ago. Thank you.

DR. CROSSON: I am just pointing out that we coordinated our ABC recommendation for blueline tilefish with the Mid-Atlantic SSC last year, and so, whatever changes we make, we probably should keep them informed.

DR. SEDBERRY: Thank you. Okay. Do we have any other clarifying questions on Erik's presentation before we take public comment?

DR. SCHARF: Erik, I was just going to revisit the question I asked earlier about the reason for the changes in F that you see at the end of the time series, and so, for the black sea bass and the vermilion snapper, what you referred to is those big swings at the end of the time series from the MRIP data, particularly in the discards, and those are pretty clear in those two examples, but the one that's confusing is the red grouper pattern, because you see that same change in F, where it changes the stock status from overfished to really overfished, based on the last three years of F, but, in the data that Mike showed in his earlier presentation, you see much bigger swings in the discard mortality in the middle of the time series, and, at the end of the time series, there is very little change, and so it doesn't seem like it's picking up those changes in the discard mortality estimates throughout the time series, but yet it still ramps up the estimates of F in the last three or four years, and the changes in the MRIP data don't seem to reflect that change.

DR. WILLIAMS: Fred, all I can say is the data does take a little bit of a tick up, and the only thing to maybe also point out is F is sort of a -- As a parameter, it responds non-linearly to changes in landings, and especially when you get to higher values of F. It starts to respond so that just a slight increase in landings can result in what looks like a sizeable increase in F, but, yes, I mean, again, we looked at the diagnostics in many ways, and the data is the data, and the model results are the model results, and we didn't see anything aberrant.

DR. ERRIGO: For red grouper, maybe one of the reasons for that is there certainly, in magnitude, is a much larger difference in the middle of the time series, but those are -- That doesn't take into account stock size, and so towards the end of the time series is when the population becomes very depressed and overfished, and the landings go way, way down, and it could be that small changes in effort or in landings result in large changes in F, or that's how the assessment interpreted that. I can zoom into that area to see if there is that kind of pattern, because I didn't, and we wouldn't be able to see it from the scale that I showed.

DR. SEDBERRY: Any additional questions?

MS. MCCAWLEY: Did I hear that the Monroe County landings were not split out, and so they're taking all of Monroe County and making it part of the Atlantic, and could someone help me there? Maybe I misheard that.

DR. WILLIAMS: No, that was not -- What I was saying is that what we used to create the adjustment factor was a more coarse -- We just pulled the South Atlantic landings from the MRIP dataset, and so we used that just to create that adjustment vector, and then we actually applied that vector to the actual landings that were in the original assessment, and so it would have corrected just Monroe County, or parts of Monroe County, that were in the assessment. It just would have scaled those up by that scaling vector, and we did not change the boundaries in any way.

MS. MCCAWLEY: All right. Thanks, because I was trying to see if that was attributing -- If you could attribute some of this to the fact that those landings were looked at differently, but it doesn't sound like they were.

DR. WILLIAMS: Just to follow-up on Fred's thing, I was just pulling up the report. If you look at Table 2.1 in the report, you will note that, for red grouper in particular, the last three years is where we have some of the highest adjustments going in, and so red grouper in particular definitely takes a tick up, in terms of adjustment, in the last few years, and so I think that's explaining that difference.

DR. SCHARF: Thank you.

DR. SEDBERRY: Any other questions? Do we have anyone from the public that wants to comment on this presentation? I don't see any, and so now we're at a -- I expect that there will be quite a bit of discussion about this, and we may not want that interrupted by lunch, and so I'm going to suggest that we take lunch now, before we begin the discussion of this, and then take up the discussion in an hour-and-a-half, after lunch. Does that sound okay to everybody? I don't see any objections to that, and so that would put us back here at one o'clock. We are recessed until one o'clock.

(Whereupon, a recess was taken.)

DR. SEDBERRY: If everyone will please take their seats at the table, we can reconvene the SSC. We will continue where we left off, and we had the presentation from Erik Williams on the MRIP assessment revisions, and we had a clarifying question-and-answer period, and now we're ready to discuss it, and so let me bring up the action items.

SSC members that are taking notes on this include Yan, Eric, Fred Scharf, Fred Serchuk, and Alexei. I guess we'll go through this species-by-species. Each species has a list of action items. The first one, under Section 8.4, is blueline tilefish, and so Mike has projected the action items, and they are in your overview document as well, and so I open it up to the committee for discussion.

DR. NESSLAGE: Did we ever hear back -- Did Nikolai ever have a chance to speak to the sudden drop in blueline biomass at the end of the time series? I would be curious to hear something more, just to make my mind feel a little bit better about it.

DR. SEDBERRY: We didn't hear from Nikolai, and I don't know if Erik is still on the line.

DR. WILLIAMS: Yes, I am on. To Fred's question about that, if you go to Table 2.1, what you can see in the report is that the adjustment vector definitely takes an upturn at the end of the time series for blueline, and I think that partly explains it, particularly in the discards I think is where it shows up.

DR. SCHARF: I don't know if we should talk about this now, and Mike and I were just talking about it, and maybe we can figure it out, because I'm not sure why there is different -- So the vector, the scaling vector, that Erik is referring to in Table 2.1, those ratios that are that FCAL to ACAL ratio, how do those align with the figures that Mike presented to us early this morning that show the old method versus new method, because that was what I was looking at. I wasn't looking at that table, Erik, when I was asking that question.

I was looking at the old method and new method and not seeing the big difference between the new and the old at the end of the time series for red grouper that would drive that F, but the ratios that you mentioned in Table 2.1 do reflect that, and so I guess the disconnect between the information in Table 2.1 versus what Mike presented this morning graphically.

DR. REICHERT: Fred, you mentioned red grouper, and you meant to say blueline tilefish, or are you --

DR. SCHARF: I guess the issue would apply to both.

DR. SERCHUK: Just a general comment, Chair. In light of the discussions that we had this morning and the guidance that we provided with adding a term of reference to all assessments to be done with the revised MRIP data for closer analysis of the sampling intensity, the sampling regime, whether it's how many trips were sampled, these types of things, that was guidance that we gave because we felt that we could get estimates that were based on -- Possibly on small sample sizes or small sampling of trips and so on and so forth.

We did that, I suppose, because we felt that that was a source that could contribute to getting estimates that had high imprecision and were not representative. Having formed that term of reference for future assessments, I'm just wondering what guidance do we give ourselves now that we look at these revised assessments, because those have the same type of underlying issue here, and so I'm just wondering if it's premature to move ahead and accept the assessments carte blanche, and I know they were done exactly as they were in the past, and I know that they applied the MRIP data exactly as they were supposed to, but that doesn't get at some of the basic issues that we discussed this morning relative to being a little more circumspect about just taking the MRIP data at face value, and I'm just wondering if we have forsaken that or if that's something we're going to consider.

DR. SEDBERRY: I don't know. What are our thoughts?

DR. SHAROV: Well, I don't know either, but I remember Erik was saying, earlier in his presentation, that, in his view, these new data are better in any possible dimension, and so I wonder if Erik could comment on this and maybe relieve some of Fred's concerns, if that's possible at all.

DR. WILLIAMS: Sure, Alexei, and I'll jump in. I mean, we all recognize that MRIP is not a perfect design to cover all of our recreational species, both state and federally-managed, and that's sort of the crux of the problem. What I would do is make sure that you try to separate any issues we've all always had with MRIP versus what's happening in this change. If you just isolate what's happening with these new numbers, there is no way you would doubt or discount these new numbers, because they are better in every way, and the survey has been improved, and it has addressed almost every problem that was highlighted in the original review that was done back in 2005.

It doesn't solve some of the other underlying issues that have always been a problem with MRIP, and that is the rare-event thing and how well the sampling is designed for offshore species, in particular deepwater species, and that's another issue. I wouldn't get that wrapped up with this MRIP revision. I would separate the two, if you can, and, again, I don't disagree that there is not issues to be discussed with some issues with MRIP and how well it samples our federal fisheries, but, in terms of these new numbers, in my mind, they are the best available, and they have improved the survey quite a bit.

DR. SEDBERRY: Thank you, Erik.

DR. REICHERT: So they are better, and can I translate that into there is not as much uncertainty around those estimates, because I realize that the uncertainty that was in this, in terms of intercepts and representing the offshore fisheries, that still remains.

DR. WILLIAMS: Right, and so, again, I would encourage -- I don't want to be the defender of MRIP, and I would encourage everybody to go back and actually read some of the reports that came out of the whole process of updating MRIP. They addressed known biases, and what you will see, in terms of uncertainty, just observation error, and not necessarily process error, is their PSEs have gone up, and they believe that they are more realistic, and, actually, I think they've demonstrated that the new PSE estimates are more realistic, and so, not only have they improved the design of the survey to eliminate biases, but now they are also getting a more accurate estimate of the uncertainty as well, and that's why I stand by my statement that all the changes they have made are solid improvements, and they make the survey better. It doesn't necessarily solve some of the underlying issues we've had with sample size for offshore species, but that's a money and re-design problem that is irrespective of the changes that occurred with the most recent MRIP revision.

DR. SERCHUK: There is no question that the current system that we have, in terms of MRIP, is better than the previous system, but the basic underlying data from 2015 back haven't changed one iota. That is, if you had a very low sample size, or the MRIP standardization applied whatever standardization was developed through the overlap between the 2015, 2016, and 2017 parallel surveys to the previous data through the standardization process, but it hasn't changed the underlying number of trips or the number of samples and so on and so forth, and, if what you're saying is there was adequate sampling and we're convinced that there were no problems back then and that the sampling was adequate from both a representative point of view and a position point of view, that's fine, but we had a discussion this morning that, quite frankly, we would like to see that analyzed in the future, because we know, as was mentioned by Erik, there are cases where we only have a few samples or it's a species that is seldom encountered and so on and so forth.

I just want to be assured, from those people that are familiar with that database, that we can use the data and have high confidence that it's going to be, one, representative and robust, and, if I can have that assurance, I would say, okay, we can start interpreting these assessments.

DR. SEDBERRY: I don't think anybody is questioning that there haven't been problems with it in the past, and we all recognize that, but it has been deemed in the past to be the best scientific information available, and, as you say, nothing has changed. It's still the same data. It's still the best scientific information available.

DR. SERCHUK: But have we looked at it in that sense? Have we gone down at the data level and had a table of how many trips were sampled and where the information came from and so on and so forth? Maybe the analysts have done that, and, if that's the case, if the analysts have looked at it and said, yes, not only is it the only data, which may be the best available, but there is -- I don't know whether the sampling intensity has been the same throughout the years. I don't know whether one trip was sampled or fifteen trips were sampled. I don't know what the parameters are for doing that, and I thought that's what our discussion was this morning, and maybe I read too much into it.

DR. LI: I agree with Erik and what he said earlier. Uncertainty in the whole system is always there, and it cannot be -- No matter how good the design is, because we -- What we can observe, what we can sample, is very limited. It's a small piece of the whole system, and that's why uncertainty is always there, but a well-designed survey can help us to get better representative samples, and that will help us to better quantify the uncertainty, although we don't know, and although uncertainty is there, but there is a way that we can improve our uncertainty for the estimate, and that's where this design comes. I mean, from the design, the point of the design itself, the design itself is better, for sure, because it covers a larger group of possible people who are fishing from the data itself. I mean, the design is better.

DR. NESSLAGE: Are you taking general comments or comments on blueline? If I have a comment on blueline in particular, do you want me to hold off?

DR. SEDBERRY: No, go ahead.

DR. NESSLAGE: On page 15 of the report, the analysts do a really nice job of describing this time period at the end of the time series and what might be causing it, kind of that analysis that folks were talking about earlier that we would like to see, or at least -- They have done a little bit of work here.

This is saying, however, recreational landings in 2013 were very high, due to high MRIP landings in the Florida east region. Then, in the current analysis, that causes a landing adjustment in 2013 and a scaling factor of 1.7, and that has total removals changed by about two-hundred-and-forty-some-thousand pounds, having a substantial effect on the assessment, and so they've done some of this background close looking at what might be driving some of these trends.

That makes me feel a little bit better, but it also makes me feel a little bit worse, knowing that this one section in Florida east might be driving the blueline tilefish to overfished and overfishing in

the last few years, and so I like what they have done. I think I'm less -- I'm a little bit more concerned about the assessment as a result though, not for their lack of work though.

DR. SEDBERRY: Any additional discussion on that point?

DR. ERRIGO: Just to add that I was involved in this assessment quite a lot, and, before this assessment in blueline tilefish -- There were a lot of issues with spikes in certain years, and 2013, in fact, was a particularly onerous year, where people were wondering why there was such high landings, and, before this calibration, that was a particularly troublesome year, with exceptionally high landings, due to very, very few, maybe even one or two, intercepts in that region, and so it was an issue before the calibration, and the calibration didn't cause that spike that wasn't there before, and so it was there before, if that helps. I did a lot of work on that particular year. In fact, I even called the person who intercepted that trip.

DR. REICHERT: To that point, and I think that's true for all of these revisions, to what Fred said earlier, a lot of these data were discussed in the data workshop, and some data points were sometimes removed, and some were weighted, and we as an SSC, after that exercise, accepted those assessments and indicated the uncertainty associated with those assessments, and so, for blueline tilefish and for some of the other revisions, one of the things that I am trying to answer in my head is how did the uncertainty change in these revisions, and I am not entirely sure yet.

However, I think, in blueline tilefish, because of some of the assumptions, including some of the earlier assumptions, where there were no ages and some of the life history parameters were chosen from meta-analysis, and we are now borrowing some information from other species, again, and, so, in particular for blueline tilefish, I am trying to wrap my head around how that may affect the uncertainty in this revised analysis.

DR. NESSLAGE: To that point, I am just staring at the PowerPoint that Erik provided and looking at the difference between the blue line and the black line, the blue line being the MRIP revision and SEDAR 50 being the old version of MRIP, and, yes, those uncertainties are there. You can see the spike in 2013, and it's still there, but it's higher, and you can see it's driving the bus, in many ways, at the end of the time series, and so the uncertainty around the end of the time series is now greater because that spike is higher, and it's putting us really close to B over MSST, and right on the line for F over FMSY, and so I don't think that saying we're working with the same set of data is true, and I have concerns.

For instance, in the golden tilefish assessment, there was one year where the recreational data came in and had a big spike like that, and the data workshop -- They decided to take the average of the three years around that spike and replace that spike with, again, the average of those three years, and I don't know why that wasn't done.

Obviously, I wasn't part of the blueline, and they probably had a good reason for it, except that it sounds like it was largely due to one particular intercept, which maybe we should be more consistent across assessments in how we deal with those low-intercept, spiky occasions, because they are having an impact on the assessment, and, whether that's representative of what's actually going on or not, I don't know. That's part of the uncertainty, but it does give me pause.

MR. GRIMES: I hope this is helpful, and I say that in advance, because I am not entirely sure, and this is probably as much of a question as a statement, and I'm going to use first names, and please forgive the lack of formality, but it's easier for me. Erik said that we should try, or the SSC should try, to focus its discussion or divorce the discussion now from discussion of uncertainties or problems inherent in the recreational data collection programs, right, and that those uncertainties, whatever uncertainties were in the estimate, those were discussed, and those uncertainties existed in the prior versions of these assessments, which have all been accepted and have all been used for developing ABC advice.

To the extent that those uncertainties were there and those uncertainties are carried forward, there must be some difference now, some new piece of information, that makes what was previously acceptable now unacceptable, right, and I'm not sure that I have this entirely correct, but it sounds like -- In terms of the number of intercepts that occurred, well, the number of intercepts that occurred are the same in the prior assessment as they are in this revised version of it, and so what's different about it?

I am thinking that maybe, because now the magnitude of the recreational catch has increased, maybe it is magnifying that uncertainty in some way, and I don't know. Again, I'm a lawyer, and I'm not a stock assessment person in the least, but maybe that is really the heart of the issue, and I don't know if it is or not, and maybe -- I think the discussion should focus on that, but also think about -- I mean, you can look at these individual-stock-by-individual-stock, or thinking of the issues generally, and so those are the uncertainties that I would see associated with MRIP versus the uncertainties associated or magnified or created by this revision, but, again, all of these things have been accepted before, and so what is different now?

I think, to stray a little bit from that path, some of the earlier discussion that I heard, and I think Carolyn was touching on this, is that, maybe because of the magnitude of the change in the recreational catch, none of these revisions would be appropriate, because you need to delve deeper into the assessment itself to see if there are other consequences resulting from this large increase in recreational catch.

If that's the case -- I mean, that's sort of a broad-brush argument, but you might say, in blueline, that recreational catch is such a small component of the overall harvest that it would be less significant in the case of blueline than it would be in the case of say black sea bass, which is predominantly recreational in nature, and that's -- I am trying to make the argument that you can wholesale say that, no, we wouldn't think that any of these revised assessments are appropriate, for reasons X, Y, and Z, or you can go through individually and say, generally, they wouldn't be, but in the case of this one, we think it's okay, for Reasons A, B, and C. Does that make sense?

DR. SEDBERRY: That does make sense, and I don't think we have anything better to offer than what we have now and what we have used in the past, and so I agree with you.

DR. SERCHUK: I would accept your argument if I was convinced that the data were looked at its very elemental level. The fact is that using all the data, as if each data point were equally valid and were based on an adequate number of sampling intensity, is not the case, and we are also inconsistent. As pointed out, we've done something with the data in one year in one assessment, because we felt it was an anomalous thing, based on whatever sampling was done, that we feel was not representative, and we've done a different thing here, and I think we can -- I don't think

it's necessarily appropriate to say, because we've done it in the past and accepted the data in the past, we have to accept it now, when we really haven't looked at the data in that fine scale, and that's one question I have.

The fact is that we've done things slightly differently, as pointed out by Genny, and I just want to be assured that, as I would be if we were looking at age comps or length comps -- When was it sampled, were the sampling regimes the same from year-to-year, and we know, with blueline, that they're all over the place. Some years they got closed down and they can only go in certain areas and so on and so forth, and I don't know, but I am looking for the experts to provide that information to me, and, if the past they said we just used all the data, because that was what we had, that doesn't really get to my issue. My issue is, and we all know this, from a sampling probability point of view, that, if you take two samples, that is very different than taking 200 samples.

I haven't seen that, and I'm ignorant of that, and I will point that out, but, if I were -- If somebody could tell me that that was the level of analysis they looked at and said, yes, not only is it the only data that we had, but we're assured that it was representative, then I would say let's go ahead with these new assessments.

DR. SEDBERRY: But we didn't just accept the data in the past. It went through the entire SEDAR process, and it was weighted or manipulated however at the time the experts felt that that data needed to be used, and it wasn't just a blanket acceptance of the data. It's been through a huge process in the past before it's been used.

DR. REICHERT: Fred, to clarify, in the beginning, you said we were using data points that we may not be using now, and can you elaborate, because I am not sure that I understand what you specifically are referring to. Maybe I missed that, but maybe you can elaborate a little bit.

DR. SERCHUK: My understanding is we have used all the data from MRIP in the past, just as it was presented from the MRIP files, and we didn't look at the confidence limits around each of the data points, and we didn't look at the sample sizes, and we didn't look at the number of intercepts. Am I incorrect on that, because, if somebody has looked at it in that detail and can affirm that, wait a second, when there were only two data points in one year, we didn't accept that, because we felt that might have been all the data that we had, but we don't feel it was a sufficient sample size to characterize the landings appropriately, I will be quiet.

DR. REICHERT: I think that is part of the, and others can chime in, but that's part of, in particular, the data workshop process, where a particular recreational working group looks at the data and sometimes decides whether the PSEs -- Or there are issues, high peaks that are downweighted, or there is decisions made in the data workshop process. Erik, correct me if I'm wrong, but those decisions were not revisited, correct, and so --

DR. WILLIAMS: Yes, that's correct. We did not revisit it. This was just simply replacing the data, assuming that all the decisions that had been made during the SEDAR process still stood, and there was no reason to question those.

DR. BELCHER: I think some of that goes back to what came out of the recalibration, because the way the recalibration works is the raking approach, and so it's like a post-stratification. They had

seven levels, four levels, and they had to collapse, because they had issues with empty cells, and so that's where the PSEs and the variance increases as you go back in time, because their ability to chisel down became impacted, because they didn't always have it to those levels, and so I feel like that's kind of there, because they did drill through that as they were looking at the best way to apply the raking procedure, and so, I mean, inherent to the process, I don't think that the process -- The question becomes where do you start questioning it.

The process was accounting for that, and so it's kind of been in that development as they're putting the process forward to generate the estimates, but we have never -- In the time that we've done this, I don't know that we have ever questioned whether there is a sufficiency of sample size relative to whether it was MRFSS or MRIP over the years. We accepted it as it came from Dave's group as this is the estimates that we have for recreational landings, and then we go forward with it. We have never really gotten into all the necessary dirty details of it, that I know of. Marcel is looking confused.

DR. REICHERT: Do you mean during the stock assessment process or --

DR. BELCHER: When we go through the data workshop, the MRIP index comes forward, and it's written as a white paper, and we know the generalized approach, but have we ever questioned the sample sizes directly of how they have gone through the process?

DR. BUCKEL: I don't remember which species, but I remember there was an issue with a spike, and the PSE was high, and so that data point was thrown out and the average of the preceding and following year were used, but I don't remember the species, but I remember those types of situations.

DR. ERRIGO: That happened in blueline tilefish, SEDAR 50, and it was a discard estimate. It was the highest point in the entire time series, and it was decided that that couldn't have been a valid estimate. It has also happened in other species. It also happened in golden tilefish, and I can't remember other specific instances, but it has happened before, where points were either smoothed and thrown out and averages used and different methodologies, depending on what the issue was.

DR. SEDBERRY: These things are done during the SEDAR process, during the data workshop, by a SEDAR panel of experts that know this fishery and know the data and have made a judgment that this is anomalous for this species for this assessment and should be thrown out.

MR. GRIMES: Well, that creates a question for me then. If we have the new numbers -- We went through the data workshop, way back whenever, and looked at that, and, now that we're plugging in new recreational numbers, does that change those PSEs? Does that create an issue that you need to go back to a data-workshop-type process in order to have the same level of -- This is an earnest question, and this is for you people to discuss and decide, but you need to go back and revisit that, or are you comfortable enough with what was done before that you can plug in these new numbers and derive what you need?

DR. REICHERT: That goes back to my earlier question, and I framed it in the level of uncertainty, whether including these numbers increases uncertainty or are there now decisions that, and I think that's what you were getting at, that we would have made different in the past if we would have

had these numbers, and that also goes back to some of the things that I said earlier, and Erik answered some of that, in terms of are there other parameters that may have been affected by these new numbers.

Again, if we would revisit this, whether you would plug in different values, and maybe Erik can address that a little bit, or whether there would be a very low probability that other parameters would also change if, for instance, we would have approached this in another process, like a workshop or a standard assessment, but that's the fundamental question that I am struggling with, and so, Erik, I'm not sure if you can say anything to that point.

DR. WILLIAMS: Probably not. I mean, I think you're all talking about the general idea that Fred was raising and that Mike Errigo talked about, how we address it on a species-by-species case, and the reality is what we have not done is look at the MRIP survey and make some declaration about minimum sample size that we're willing to use or maximum PSE that we're willing to accept an estimate.

I know that MRIP itself is actually looking into this themselves, and they are discussing whether they will even report numbers based on whether a PSE passes some threshold or not. The underlying problem though is, if we don't use the data, what do we use in place of it? We have no alternative estimate, and so it really, in some ways -- I hate to use this word whenever I discuss science, but you have to put your faith in the design and that it's robust enough that it can handle things even at really low sample sizes.

DR. REICHERT: Erik, in the beginning, you said probably not, and so that means that what you're saying is that it would probably not change the estimate of some other key parameters if we would look at this with a fresh eye, correct?

DR. WILLIAMS: Correct.

DR. REICHERT: Okay. Thanks.

MS. LANGE: I'm not sure if this is relevant anymore, but I thought earlier, Erik, you had indicated that, in those cases from the original assessment, where there were data that were averaged or something, you followed the same corrections. When you first said it, I thought you were talking specifically about the blueline tilefish, where those three years were averaged to accommodate that high peak, and so was that done also?

DR. WILLIAMS: No, we've actually been I would say not terribly consistent in the way we handle various MRIP quirks, to characterize them, because I think Mike Errigo summed it up well. In some cases, we just have really low sample sizes, and it creates a spike, and so we smooth through it using neighboring years.

In other cases, we've actually drilled down into the actual sample itself and realized that the sample just absolutely makes no sense, and so we actually remove that sample and re-estimate, and so it is -- I guess the one thing that you should probably have some confidence in is that we do look at, down to the data level during these SEDAR processes, examining this data and looking at actual samples, looking at numbers of samples, where they are coming from, the spatial extent, and all of that, and so it gets back to sort of the other discussion about do we want to second-guess

ourselves, and I know that's hard to -- It's easy for me to say, yes, we investigated all of this pretty thoroughly once before and you should just accept this as it is, and I understand that it creates some changes, and it makes people a little uncomfortable.

DR. NESSLAGE: I just want to say I think, at the end of the last meeting or the meeting before, I mentioned this was going to be a problem, and everyone jumped down my throat when I suggested that we come up with some guidelines for when and how to use these data. I agree with Erik that they are the only thing we have, but we need to have a consistent and a very carefully thought out way to incorporate these estimates, and they are not data. We are getting estimates from MRIP, and that's the other thing to keep in mind.

I am worried that we're being, as I mentioned, inconsistent among assessments, which I know it's inevitable, because not everyone is on the same panels, blah, blah, blah, and Beaufort does a good job of trying to keep everyone on track, but, at the same time, I'm a little worried that -- We're going to see big impacts with the new effort, because of the new effort estimates, that are going to create changes like in the blueline assessment here, where, before, well, it didn't have a big impact, and so we're not -- We would rather not mess with the data, right, and we would not rather not replace a peak with an average of three years, or whatever the method may be, because, typically, as scientists, we don't like to replace the actual data or estimates with an ad hoc approach, but, when it does have a big impact on the assessment results, you consider it more carefully.

I am rambling a bit, but I think this whole MRIP revision is highlighting some of the shortcomings of our approach to handling the data, and I am still very leery about moving forward with these revision assessments, not because they didn't do a great job with what they had, but because perhaps how we, in general, the whole process, are using the MRIP data is not as thoughtful as it should be.

MR. GRIMES: I think, if I am interpolating this correctly, I think you can divorce the data or the estimates, the MRIP information, and you can say that is best available, and I don't see how we could possibly defend saying that's not best available, given the record that the agency has built and the time it's taken to improve all of this and unequivocal statements about the improvements from MRFSS to MRIP, but I think it's possible to say that information that comes from the program, those estimates, they are best available, and the information coming out of this revised assessment is not best available, or that we have concerns because we have not gone back in and had these data-workshop-level considerations looking at the effects of that information, those estimates, on the overall assessment and the ultimate catch level or the end products that come out of that assessment, and so I think you can say that, that we have concerns there, and those aren't concerns related to the MRIP information, the quality of that. Those are concerns related to how the assessment handled that and how any of those data concerns were considered, because, again, you've gone back and changed the information, the data, as I will call it, without having a data workshop that really drilled into the stuff that I think Fred Serchuk was getting at.

DR. NESSLAGE: Sorry for the ping-pong here, but the MRIP estimates are -- The revised MRIP approach has been peer reviewed, and it's best available. I think we can all agree that these improvements, as Erik said, are great. What the MRIP crowd doesn't do is drill down to what the impacts of that particular estimation framework are for each individual fish, and that's what gets done at the data workshops, and so the framework for generic estimation using a dual-frame, blah, blah, blah, blah, recreational survey is the best available.

Whether or not that's the best we could do for this fish has not been determined yet for any of these species, in my opinion, because we haven't had the data workshops to really take a close look at how the new effort estimates are impacting our total MRIP harvest, catch, discard estimates, given the number of intercepts, et cetera. Uh oh. I'm in trouble with John Carmichael. He's at the table.

MR. CARMICHAEL: No, I think you're making a very good point, and so I wanted to not get caught up in what has happened and what could happen, but does this indicate that what should have been done, perhaps, was a data-workshop-style evaluation of the MRIP data for these four species, or maybe is that what needs to be -- To try to be accomplished, is that the core problem of questioning -- When we normally do an update and stuff, you've gone through that, and you did it, and you're adding a couple of years, and you're presuming that those couple of years maybe don't add any major issues, but, if they did, in a standard, you would talk about them.

In this case, you didn't have any of those opportunities, and we have changed the entire time series of the MRIP data, and so the evaluation that went on in the original standards and benchmarks may no longer apply, because these things tended to not have behaved in any sort of way that anyone can predict.

As Mike showed, some are higher early, and some are higher later, and spikes might have moved, and some spikes are worse, and some spikes are less, and all of that stuff is kind of out the window, and so what this needs is kind of that data-workshop-type evaluation of the actual data itself and what are the spikes and where do you have concerns that there is a spike and maybe I don't trust it, and a fairly low PSE, and can I do something better that's more accurate, and we would want something like that before we could agree that these revision assessments are best science. It sounds like we kind of maybe need something like that to satisfy the science standards, and this in no way says anything about the quality of the MRIP data themselves, but just that they need the due diligence evaluation that the original time series got.

DR. SEDBERRY: Thank you, John.

DR. REICHERT: What I was thinking about was this -- I separated what Erik said earlier, that this did not likely change the estimates of some of the other key parameters in the assessment, but this is a different level of evaluating the data. This is looking at, if we would have that same conversation that we would have in the data workshop, we may interpret some of these peaks differently than they are entered in the current model, and so that's what I was trying to wrap my head around, is how to separate that discussion from how the new MRIP data may affect some other parameters in the model.

For instance, if there is some differences in the bycatch, does that, for instance, change some of the age distributions of the bycatch, or -- That means that it's not just changing the MRIP series in the assessment, but it may affect some of the other estimates, and that was what I was trying to get at earlier, in terms of the uncertainty and how that affects some of the parameters or the data that go into the assessment. Again, I have a very hard time wrapping my head around those aspects, because I am not sure what's behind the data and how these new estimates may affect some of those aspects. Does that make sense, or am I now rambling?

DR. SHAROV: Thanks very much for the discussion, and I am trying to follow my colleagues and trying to think of what I make out of this, and so what I hear is that everybody agrees, on one hand, that we have so much improved estimates of the total removals or catch and discards, based on the recalibration of the effort, and this is the best available scientific information. At the same time, there seems to be a reluctance on the side of several people to accept this as the simple, single, blanket sort of approach that would be just applied to, which it was, and it obviously used the same methodology, for each of the species here, and these MRIP estimates were simply replaced in the existing assessments and re-run.

I am thinking that we're in the position of reviewing MRIP estimates, per se, and I don't think that we are in the position of being able to re-analyze, to any degree, the MRIP estimates at this point, but, if there is a concern that, in the case of a certain species, a review of the data that are going into or the steps of the calculation and in generating MRIP-based numbers need to be reviewed so that it would verify the appropriateness or whether those numbers do make sense or there is -- Apparently there is a concern of that sort, and I would like to at least hear some idea of how can we do it differently.

What could be done differently on a species basis, relative to what we currently have as a set of estimates that are based on a standardized methodology, which are always what we're striving for, to have a standardized methodology, and we did say that this removes several biases that are generated by the previously-existing survey, and so this is a significant improvement.

The APAIS data do not seem to have changed at all, or very slightly, only because of the slight changes in the weights for the different pressure sites, and so it's all about changes in effort, of which this is a significant improvement, and so I am trying to sort of define for myself what are those black holes that some of us are concerned about that would preclude us from just simply using what has been done so far and how this could be dealt with. That's why I am, at this point, I am not clear on that, how do we want to proceed.

DR. BELCHER: Kind of continuing on with Alexei's thing, I think that's the hardest part with recognizing MRIP, is the fact that, really, what they've worked on and focused on is enhancing the estimates of effort. The effort has been biased, and so they've really focused on making that fix. What hasn't changed, and this is still the thing that was inherent even with MRFSS, is the fisheries data, or the fish data, is ancillary data. It is not accounted for in the design structure, and so certain fish are going to be better adapted, better suited for use, if you're dealing with something that is shore-mode dominated.

Now we're getting shore mode, and so our CVs are getting better on that one, but, for those other species that are rarely-occurring species, similar to blueline tile, we get these artificial things that, okay, we had a cell that relative to effort was well filled, but, when you start saying what's the catch within that cell, you might have one trip that then blows up that cell, and so I think that's part of the issue, is we get it as the final package deal, and, really, the essence is the best unbiased part of it is the effort part of it. The fish still is not what the fish needs to be to say we have unbiased estimates on a species-by-species basis, and so I don't know how we reconcile that. Again, I feel like that was the inherent problem with MRFSS, and I feel like it's still there with MRIP. I don't know how we fix that without structuring your sampling design to be more fish-centric as opposed to trip-centric.

DR. SEDBERRY: Did you have something to say, Genny?

DR. NESSLAGE: You all are looking at me like you expect me to say something.

DR. SEDBERRY: We just kind of expected you to say something, but you don't have to say anything.

DR. NESSLAGE: No, I agree with Carolyn. If you want me to say something, I will say that I agree with Carolyn. The one thing to keep in mind though is, if I understand correctly, the intercept methodology has changed as well. They are now randomly sampling across a wider range of times of day and places that they might not have sampled, because people weren't necessarily showing up at the times they thought they would, and so it is not -- The last few years of intercepts are not the same intercepts that we used back when this assessment was done, and so there is a discontinuity there, and I know that they're trying to calibrate for that, and that's fine.

That's all you can do, but we're not dealing with the same data, and we're not dealing -- I agree with Carolyn completely that the overall methodology is a general design, and it's not species-specific, and it is definitely not designed for blueline tilefish, for instance, and some of the other species that the South Atlantic is challenged by, and so I think the answer is, unfortunately, we have to have data workshops to look very closely at these, which is time consuming and annoying, but, before we jump to making stock determinations with the new data, I think it's critical, but I am happy to be outvoted or overruled.

DR. SHAROV: Thanks. I certainly would --I very much appreciate Carolyn's formulations of where we are, and I think it makes it clear, and I agree with Genny, but does it mean that it should be -- What Genny is proposing makes sense, and should it be done on a species-by-species case? These concerns are applicable to just rarely-occurring species, like rare intercepts, that could very much drive the overall estimate, versus the ubiquitous species that are everywhere and that are very well covered, and so are we saying that, well, at least that such a review would have to be done for at least all species that were presented today? Probably, just to be consistent.

MS. MCCAWLEY: Luiz Barbieri isn't here, and I was not at the Gulf SSC meeting, but, based on what I understand that the Gulf did -- It seemed like they were saying, okay, and kind of like what John Carmichael was saying, and we need to go back and not accept these types of stock assessments and instead say, okay, well, let's go back and look at the MRIP estimates, and I thought that the SSC made a motion to look at each species separately, and so I think that their assessments weren't completed, and they said, okay, let's stop working on those and instead go back and look at each species separately, and so, to me, that gets back to what you all are talking about and saying let's kind of start from square-one and have a data workshop and look at all these different -- I guess I was wondering if that's what you all are saying, and I'm just kind of trying to reconcile what the Gulf SSC said and how that's relating to this discussion here, and I'm sorry that Luiz isn't here with us today, but I just wanted to throw that out there, and I see that other folks have their hands up.

DR. SEDBERRY: I think that is the direction we are working towards. Consistency has come up quite a bit here, and, of course, there is also consistency between the two councils that we need to consider as well.

DR. REICHERT: A point of clarification. Jessica, when you said the SSC made a motion, at that point you were all referring to what happened in the Gulf SSC?

MS. MCCAWLEY: Yes, just the Gulf. I can go back and find the exact motion that they made, but it was my understanding -- I think, for example, like gag is in the process, and they're saying, okay, instead of looking at all these recalibrated assessments, like you all are looking at today, they're saying let's halt that process and instead look at the new MRIP numbers from the recalibration as each new stock assessment comes online, and that's how I understood what they were saying, and so, that way, that would allow you to start from data workshop and go from the ground up, and, that way, you could question the numbers and look at the whole process, instead of -- Because it's almost like the cart is before the horse here, in my mind, with what you're looking at, because you're not able to back up and go back and question some of these things from the data workshop level all the way forward.

DR. SEDBERRY: Thank you, Jessica, and that makes sense to me.

MS. NEER: Just for clarification, the SSC -- Of the five species, for the Gulf, of the five species they were getting the revision assessments for, four of them are on the schedule for assessments in the next two years, and so, in their mind, it made sense to not take these now and to wait, but they are already on the schedule to get these, and so they've just said we're waiting, and so it's a slightly different situation, where you guys would probably have to set up a special -- Some sort of way to go back to look at the data stage, and the Gulf already had those in place before of the five species, simply by the benefit of their assessment schedule and how long these MRIP revisions took to get to you guys in the first place. It's not like they said go back and do -- You guys are suggesting a very similar thing, but you might have a different process to make that happen, and so just for clarification. They are just lucky that they happen to have these in the pipeline already.

DR. CROSSON: Just as a point, I sent out a copy of the Gulf SSC report this morning, and I think it's in your email. I haven't had a chance to look at it, because we're talking.

DR. SEDBERRY: Yes, I haven't looked at it yet either, but thanks for sending that out.

DR. REICHERT: I think there was an email sent out, and I haven't had a chance to look at those either. I agree with everything that was said. The thing I'm struggling with a little bit is that would mean that, in terms of -- That means that we refer back to whatever information is on the books, and that is the previous assessment, correct? We know that the MRIP estimates used in that assessment may not be the most appropriate, and so, in terms of timing, if we recommend this, what would that mean, in terms of recommendations or actions, and I'm not sure if anyone is able to answer or address that.

DR. ERRIGO: If you don't use these to make ABC recommendations, of course, your ABC recommendations that you already made will stand. If then you would like to have an evaluation, a data workshop-type evaluation, of all these species and revisiting the MRIP data decisions, that would be set up, and that would have to be done and run through that process. For these particular species, then you would go through that, and my take on this is you would go through that, you would go through each species, and you would decide on what decisions are valid, which ones aren't, and you would get through that whole process. Once that is done, then you would take the

decisions from that and re-run the assessment with the data that came out of that data workshop and get those results and use those revised assessments to make new ABC recommendations.

As for a timeline, I don't know. I don't know how long it would take to set up a data-workshop-type workshop like that or how long that would take or anything like that or how long the revisions after that would take, because we will start getting into -- Other assessments will be going on, and so I don't know who would be available and how that would work. That's a SEDAR process issue.

MS. LANGE: If that were the route that we were to take, then these would still be revision assessments and not updates, and so the data -- All of the other datasets would be the same. The only thing that would need to be reviewed for each species, for these four species, would be the MRIP data, correct?

DR. ERRIGO: That would be my take on it, because these are not on the SEDAR schedule again for quite a while.

MS. LANGE: Could that be done with a webinar with relevant Center staff that are working on the -- Or would you need an in-person meeting? Instead of doing four datasets for one stock, you would have one dataset for four different species at one time.

DR. REICHERT: If you would allow me, to that point, I think we need to be very careful, because now -- I may have misinterpreted what you were saying, but you said, well, the only thing we do is look at the MRIP data, but that's what was in this revision. I think what I heard earlier is a somewhat broader evaluation of the MRIP data and how that may affect decisions that were made earlier, in terms of peaks and other effects, correct, or am I missing what you were saying?

MS. LANGE: My understanding is, in the data workshops, at least the ones that I've been involved with, each dataset is evaluated in and of itself, and you check that, yes, that's good, this one is good, this one is good, and so the only one that doesn't have that seal of approval right now is the MRIP data, and so only the MRIP data would need to be reviewed, and how it interacts with any other dataset is irrelevant until the assessment is done. Is that data -- Are there issues? Like should that peak be adjusted, or, since there was only one interview that occurred, that would throw that one out, or whatever decisions are made and documented, and my expectation is it would only be for the new MRIP data.

DR. BELCHER: I am just kind of going back to the general synopsis slide, or summary slide, that Erik kind of gave of relative to increases in SSB recruitment, and increase in MSY is also part of that, and is that right? Can we pull that slide up? Increased MSY values for all species, and so isn't there a possibility then that -- Without seeing the numbers, and I know that's part of the thing, is we're being asked to fill in a table, but our OFL is tied to an MSY, and MSY is higher, and we go through our process, and is there a chance that ABC could be -- Because MSY is higher, and if we do the upscaling and adjustment, now our ABC increases, which means an ACL technically increases, and yet we still have overfished and overfishing, and so that's without numbers in front of me, but my head and its logic is kind of scaring me with the idea of, again, changing numbers to change numbers and if there's the potential that now, all of a sudden, we could be being more liberal in an ACL/ABC situation, or is that too simplistic? Like I said, without seeing numbers and knowing where it's going, it's -- I am just going off of the MSY value increasing.

DR. SERCHUK: Those are general things that have happened with these assessments, and I agree with that. If we talk about blueline particularly, and I don't want to get into -- I don't want to use the output, necessarily, as a driving factor, but we've been asked these questions here, and the first question is does the stock fall within the same control rule.

Well, for blueline, it does not, in my opinion, and, if you look at what was done for blueline, they followed exactly what was done previously, and so whoever did it did exactly what they were asked to do, but the result is that the stock was now experiencing overfishing, and the projection that was done was done at the F 30 percent level, which was exactly what was done before, the P* 30 percent, but it only brings the stock down to the FMSY level. It doesn't stop overfishing, and that's the result we -- That is the result that we're presented with, and so they're completely different, because, beforehand, the stock was far below FMSY, and so we followed a control rule that we normally follow.

In this case here, we don't have the projection, in my mind, and we can discuss it, because I think we would basically say, wait a second, you have to reduce it far below -- You have to have quite an assurance that you have ended overfishing, and the projection that we're presented with in Table 4.1.2 doesn't do that. It keeps the FMSY at 0.157 for 2017, 2018, 2019, and 2020.

If we had another one that basically said, wait a second, we're not in that control rule category of F 30 percent, but we have to bring it down, we would need another projection, and, if we're assured that everything we talked about is in terms of we can accept the assessment, we're going to have to have some changes in the ABCs, different than what's presented here, and so I don't think we even have enough information, even if we accept the assessment carte blanche, from my perspective, and I will ask all the people that are more familiar with it, to make a change right now. I know I'm putting the cart before the horse here, but it's a concern that I have that bringing it down to the FMSY level is not sufficient when you have overfishing going on. You have to bring it down below it.

DR. ERRIGO: Yes, that is correct, and, if I can clarify what was done, when status changed, they did not change the projections. They did the exact projections that were asked for previously, and so, for black sea bass, they did not do rebuilding projections, even though the status changed to overfished, and so, yes, you would have to ask for new projections that ended overfishing for blueline tilefish and for black sea bass, and then you would have to ask for rebuilding projections, things like that. Red grouper, the status changed even more, and there may be other projections that you would have to request. They only did the exact projections, and so, yes, that is correct.

DR. SERCHUK: I am saying they did exactly what was asked of them, but one of the questions that we have is does the stock fall within the same control rule, and, in this case, it does not, and so that is the reason I'm bringing it up here. I didn't want to actually get into this conversation until we had an idea of whether we were going to explore the data, first and foremost, because no one likes to look at the end results when people really want to look at the process.

MR. WAUGH: One of the summary conclusions is that the MSY values increased for all species, and I think that was the hope going into this, particularly from an allocation perspective, that the pie would be bigger, and maybe then, when you do your new allocations, the percentage will be different, but the poundage, at least to the commercial side, might be the same, but, if you all are

going to use that conclusion, I would urge you to go through stock-by-stock, because, if you look at those MSY values, it increases quite a bit for black sea bass.

For blueline, it's a very slight increase. For red grouper, there's a fair increase, and vermilion snapper is actually a decrease. It doesn't go up. It goes down, and so one of the take-aways, to me, from this re-assessment is that your overfishing and overfished parameters are going down, and your MSYs go up a little bit for some species and stay the same for others and go down for some, and that's very different from, I think, the expectations that a lot of people have had.

DR. SEDBERRY: Thank you, Gregg.

DR. SHAROV: Even though this is, of course, very important, but I think this is a second-step question on what happens with the FMSY and BMSY and what happens with reference points, because, as Erik correctly mentioned to us earlier, this is a non-linear process. Generally, yes, of course, if the much higher effort generates a much higher estimate of recreational removals, that means there were more fish in the water, which means that there were more generally in the population, and this then could and often leads to the higher FMSY estimate, but how much more or less depends on interplay of what the natural mortality is and what the removals are and at what size of the population those fishing mortality rates were observed, and so you cannot -- It's like Erik said. It's a non-linear process, and so there is no point of trying to just simply find one single relationship and adjustment. That's not going to happen, but this is the second step. The first step is what we talked for an hour or more before that, which is the more detailed review of the MRIP data that went into the analysis, and then we could talk about the reference points and the status of the stock.

DR. SCHARF: I just wanted to ask a question about just broadly how we would envision these data workshops to take place. As Anne brought up, most of the time the data workshops are -- We don't have an assessment, and so they're prospective. We're looking at the dataset, each dataset, on its own merits, and we evaluate the quality of those datasets and whether they will be included in the assessment.

I wonder, if in this case, if it's -- Since here we have in front of us we have these revised assessments, or these revision assessments, if, in this special case, where we have this new data stream, that having these revision assessments be part of those data workshops, as opposed to just a data workshop in and of itself, and being able to -- The data workshop being more retrospective, in terms of the impacts of these MRIP changes on the assessment, and having that inform the data workshop, and is that okay that we have a data workshop that's more retrospective with an assessment and revised assessment in hand. It would be informative to me, in terms of evaluating the MRIP data, to have this in front of me, but I'm thinking about our procedure and whether or not that's something that we can do as part of a data workshop.

DR. SEDBERRY: I don't see why that couldn't be done. Certainly during the current SEDAR process, during data workshops, all previous assessments and datasets and conclusions are available at that point, even though new data are being brought in at the same time. To me, I don't see any problem with that. Okay. Where are we?

DR. ERRIGO: I have a question, procedurally. We could go through each species and ask all these questions, but most of your conversation was focused on general comments. If you all feel

that this is the approach that you would like to take, I don't think we need to go through, species-by-species, each of the revisions. I can move this -- I have been taking notes in the blueline tilefish section, because I didn't have a general section, and I can move this into a general section, report-wise, and just put all these notes there, if that's where you guys want to end up.

As long as we have a path forward, like we're not going to use these revisions for ABCs at this time, because we want to have one of these evaluation workshops and look at revisiting the MRIP data decisions and all that, and we can just finish the discussion there, if that's where the SSC wants to go, just procedurally.

DR. SEDBERRY: That sounds good to me. You know, we just had the overview document arranged species-by-species, but we can certainly paste in all this introductory material ahead of that, and then the rest is just really copied and pasted from the report for the individual species.

DR. REICHERT: But I think it would still be useful for us to provide a little bit of guidance, in terms of what we would like to see. There may be some analyses, some data review, that would be useful, and that may be different for different species. I am not sure if that's the case, but I think that it would be good for us to consider that, and, in addition, I think, in our report, we probably need to strengthen our language to explain or justify the decisions we made and give a little more detail if we are not going to accept the revisions in their current form, and I think we may need to add some language to explain that or to justify that decision.

DR. BELCHER: I think these two tables do a pretty good job of explaining what my concern is, because, if you look at your F rates under the current projections based on the adjusted MRIPs, we're now saying that they could fish at a higher level than they could under the old projections, but we're not really going to adjust for that, but then the yields are also higher under the new projections, and, as Fred was kind of alluding to, if you use the control rule, we're now going to be giving them back fish, and so we're still -- I guess this is where I'm having the difficult time of how we reconcile -- If it's freeing things up and we're adding back into it, where we've restricted before, how do you talk to a fisherman about that?

The ACL is technically going down, but it's going up numerically, because we're still in the overfished/overfishing situation. We originally said that we needed to reduce F to 0.1033, but then, under the new thing, we're going to be at 0.157, and so there's an increase in fishing pressure that's coming back under the new projections, and the yield is going to be higher than what it was originally, and this is where, for me, I don't see how these projections are helping us at this point without understanding the whole behavior of the process.

DR. ERRIGO: This is blueline tilefish, and these wouldn't be the projections you would have to use for ABC. These are simply the projections that were used last time. If you ran this through your ABC control rule, you would most likely come up with recommendations for projections that were different from this, being that it's undergoing overfishing now and it wasn't before. They just re-did the old projections.

DR. BELCHER: Like I said, but this is confusing to me for that reason, because this says current projections based on the adjusted MRIP and then comparing that to the previous projections based on unadjusted MRIP, and so I'm looking at that, again, the before and the after structure of that.

MS. LANGE: Carolyn, doesn't that mean that we need to approve the data and go through a data workshop and have the analyses re-done, but not just automatically do the same? When we say it's a revision and you're keeping everything the same, that doesn't mean that you keep it the same if you're now in an overfishing state or overfished, and so, when they do the projections, they need to be done based on what the outcome of the assessment is and not just repeating what was done in the previous one, and so the recommendation, I guess, would be that we have a data workshop for at least these four species, just for the MRIP data, to determine which things might be excluded or whatever, and then that the revision assessments be conducted as they were with the corrected or adjusted data and if there are differences in the outcome relative to the status of the stock, that the new projections reflect that, based on the control rule. Does that sort of put it all together?

DR. SEDBERRY: I am going to suggest that we take a break here and maybe get some caffeine and see where we want to go. Ten minutes, and so thirty-five after.

(Whereupon, a recess was taken.)

DR. SEDBERRY: We are back. Thank you, everybody for being prompt. Next on my list of people that wished to comment, I have Erik. Erik, are you there?

DR. WILLIAMS: Yes. I obviously have a little bit of bias and opinion about this whole thing, but I am going to say what I'm going to say. I think you guys are making a rather large mistake with the way you're handling these. From the face of it, basically what I see is we have a tremendous amount of time, effort, and tax-payer money that went into SEDAR assessments, and they were deemed best available information.

We have the same going on with the MRIP. A lot of time, effort, and tax-payer money has gone into improving that survey, and it has improved that survey, and it is better than it was before, and now, on the face of it, what you guys are saying is we have combined the best available stock assessments with new improved best available data and somehow the whole thing is unusable. That doesn't sit well with me.

I understand some of the minutia that you're getting into in the discussions, and I asked earlier that you divorce the conversations and criticisms of MRIP itself from what is being presented here with these update assessments, or revised assessments. MRIP has its issues, yes, but that is not really the crux of the issue here.

I can understand the one issue with blueline tilefish, and I kind of somewhat agree with Genny's comment that, yes, that one spike now seems to be slightly influential, and I would only say slightly, and so, therefore, maybe a little bit of pause might be needed for that one, but I would say go back to the blueline tilefish assessment documentation itself, and you can see that we fairly exhaustively discussed and looked at that data point, but, aside from blueline tilefish, you seem to be chucking the whole group of them, and I would ask that, one, you go species-by-species and explain why each of these is not usable, because one thing I will point out is that black sea bass is probably one of our best-sampled species in MRIP, from the federal perspective, and I don't see how you can toss that one out, because there is no MRIP quirks, and there is no spikes. There is none of those issues with black sea bass. It is a pretty solid set of estimates.

Furthermore, I understand the criticism about the projections not being directly usable because there is a potential change in status. Well, the reason we didn't change that is we were following the same protocol we do with any assessment that comes to you guys, and that is we present to you the assessment, and then, based on what the assessment says to you guys, we then subsequently modify projection analyses based on the application of the ABC control rule, and so that still can be done. Just because you don't have exactly what you need in-hand at this particular meeting to adjust ABC, it doesn't mean you can't simply turn around and say, well, we need these revised projections and then we can adjust the ABC, but I think a big mistake is being made if we throw all of these out.

It's not like this was unknown. The changes in these assessments was predictable. We all knew, going into this three years ago almost, that the MRIP estimates were going to result in two to four-times higher catch estimates, and we also knew that there was going to be a time trend in it, and it was pretty clear that that time trend was going to increase as we get to the most recent years. Those two facts alone are enough to predict these kind of outcomes for these stock assessments, and so I would ask that you at least go through these species-by-species and be very clear about what is wrong with these before just rejecting them because of other MRIP issues. I would want to know specifically species-by-species, and I think we are owed that, because we spent a lot of time and effort on these. It may not look like it, but we did, and I don't want to see that time go to waste.

DR. SEDBERRY: Thank you, Erik.

DR. REICHERT: Thanks, Erik, and I think that's partially why I said, before the break, that we really need to add some language to our report to back our decisions. One question I had is I asked earlier about the -- Mike, if you could scroll this up just a little bit, and that goes to some of my questions, because there wasn't a lot of diagnostics in the report, and so I'm not sure, but maybe you can address this, because you guys may have looked at that. I tried to formulate this question before, but I may not have done a good job.

If you looked at the new MRIP numbers, and this was a one-to-one replacement, and you looked at the scalar, and so I understand -- You explained that the diagnostics of the model didn't change much, but do you have any idea whether or not these new numbers may have affected, for instance, because of the fact that the discards were different and there may be some changes, expected changes, in age composition or length composition and some of the other input in the assessment model, and that may or may not have affected the outcome, and so that will help me, because you said, in your opinion, this did not change the estimates of the parameters significantly, but did you guys have an opportunity to look at some of the other outcome or diagnostics or inputs of the model? That would help me a lot in looking at these four revisions, and do you know what I am trying to ask?

DR. WILLIAMS: Yes, we were purposely sort of brief with this report, in part because we were running out of time and this was sort of injected in the midst of other ongoing SEDAR projects, but we did look at the full suite of diagnostics, because it's easy output for us for our models. In fact, it's standard. We hit a button, and a whole series of graphs come out, and we looked at those, and we actually did side-by-side comparison plots for almost all of those diagnostic plots, and there were very little changes. In fact, in many cases, you couldn't even see any change, and the age and length data was not changed, and so, again, the only thing that was changed was the

landings and discards. That is it, and it didn't affect -- Nothing else was changed in the model, and so --

DR. REICHERT: Erik, I understand that, but -- I hate to ask this, but, in your best judgment, and I know you hate that question, do you think these changed estimates may change some of the other inputs or outputs, outputs like the age or length compositions?

DR. WILLIAMS: No, it shouldn't, because it's just a scalar, and so those compositions are un-scaled. They are put in as just proportions at age, and so that doesn't get affected. The other thing is the indices are put in unscaled, and so, yes, our Q estimates changed, because of the whole biomass, and, so, really, all it did was just scale up the stock assessment a little bit.

Now, what caused the change in stock status, and I mentioned this earlier, but if all we had done is just scale everything up, everything should have come out the same, including F estimates, and the only thing that would have changed is biomass and recruitment and just some of the absolute values, but all the relative values would have stayed the same, but what then did cause the change in stock status for some of these is that time trend that was basically the result of the wireless effect that MRIP has now corrected for, which is biased in the old assessments. By not taking these new assessments, you are basically saying we're going to go with the old, biased estimates that are underestimates, in some cases, because of the wireless effect.

DR. NESSLAGE: Erik, I hear the pain in your voice, and we sincerely appreciate all the work you guys did, and I know it doesn't sound like it. What worries me about what you're saying though is -- So, for instance, I'm looking at the trends in discards for let's say black sea bass, and it's not just -- Correct me if I'm wrong, and it's not just a scalar bumping up the whole time period, but, because of the wireless correction in the last section of the time series, there is actually a divergence between the two time series, and so I'm assuming, and maybe I'm wrong, for black sea bass that the discard mortalities and selectivities are probably different than that of the main portion of the catch, and so, if you start bumping up and have a different trend in the discards, for instance, you're going to get different, potentially, proportions at age, is what Marcel is worried about.

Maybe it ends up not being a big deal, and that may be fine, but I think what the committee is struggling with is that we haven't seen all the fish graph outputs like we normally do for an update, and I get that this isn't an update, and Shep is giving me a dirty look, like don't use the "u" word and use the "r" word, but, really, we're being asked to make the same ABC recommendations that we would for an update, and so we really are feeling uncomfortable making those decisions without having all the supplementary information that we normally would, and I know you're trying to keep it short, and the report is short and sweet, but even just a PDF for each species of the outputs from the fish graph that you guys looked at, and maybe some of those side-by-side plots, and, I mean, that's the kind of stuff that -- We all have to make this decision, and we're trusting you, and this sounds terrible, but I think folks aren't quite willing to make that leap, as much as we do respect your opinion, and so having that additional information might make us go, oh, okay, this looks great, for everything maybe but blueline, and so I will stop there.

DR. WILLIAMS: Right, and so why not just simply ask for that information, rather than the path that seems to be headed down is reject these and demand a data workshop to investigate the MRIP data? If you need to see more diagnostics, simply ask. You need new projections? Simply ask.

MR. CARMICHAEL: I would follow-up on that. I think, just for purposes of the record, I was ultimately going to get around to that, to saying it would be good to have the full outputs somewhere that you send to us, because I know you guys have them, and it sounds like the SSC wants to look at those. Lots of nodding in the affirmative, and so I think the SSC does want to dig into this deeper, I would say.

DR. WILLIAMS: That's fine. I mean, I understand that you need more information to evaluate it, but it sounded to me like you guys were able to evaluate it with what you had, and you were rejecting it, and that's a big difference from we need more information to properly evaluate this.

DR. REICHERT: Correct me if I'm wrong, but I don't think we were there to reject these revisions, and I think maybe the suggestion to have a workshop may be just that, to gather additional information that will help us with making our recommendations, and so I would -- Again, that's why I was asking for some more clarification in our report, and I think those additional diagnostics may negate the use for that data workshop that we suggested earlier, and so I really -- I think it would really help if we could get a little bit of additional information, but, as you said, you earlier mentioned that you feel that, maybe with the exception of blueline tilefish, that the other outputs in these revisions didn't change significantly, or at all, but --

MR. CARMICHAEL: I had asked George to really follow-up on this data workshop and have some conversations with you all about what we want to do and how and point out that we had black sea bass and red grouper on the assessment schedule in 2021, I think if you want to follow along with the Gulf and do a full evaluation at that point, and we seem to be heading in a little bit different direction now, and so I think it would probably be better to go ahead and figure out what you want to do based on what Erik has said and how you want to proceed.

Do you want to look at these in more detail at the next meeting, or do you want something between now and then? I think where we go, in terms of the workshop, depends on where you guys want to go in terms of digging into these specific assessments in more detail. Again, keep in mind we do have at least two of these stocks -- Sea bass and red grouper have assessments on the horizon, and it would be a couple of years under the current thing, and you would have to take that into consideration.

DR. SEDBERRY: So, do we want to look at the additional detail, the diagnostics and other additional details, in a webinar or some other way in between now and our next meeting, or can we wait until our next meeting to look at this?

DR. REICHERT: We are serving at the pleasure of the council, and what is the council's timeline for this?

MR. CARMICHAEL: I don't sense that the council has a hard timeline on this. They want to make sure that they have the right information, and they don't want to be making changes and immediately be making more changes, which is why I kind of brought up the sea bass and red grouper, not knowing how long it would take to go through this workshop and potentially changes and getting other things, knowing, as Erik mentioned, all of this gets squeezed in with all of the other SEDAR stuff that's already going on, and, if it required getting some data from the folks in Miami and more details on the MRIP, that's a real challenge, because data is the number-one bottleneck in assessments right now, and so I didn't want to get us into something where maybe

the council would be looking at a new ABC in 2020 based on this and then an assessment going on in 2021 for black sea bass and red grouper.

I think that's the kind of stuff the council would like to avoid. They would rather make the change and be good with it than be making a change and the next year make a change. I hear that a lot at the council table, that you give us an ABC one year, and, before we even get that in, you're giving us another ABC, and that creates a lot of timing problems, in terms of the council taking action, and so I think the council concern is more let's get it and get it right than try to impose some strict timeline on you guys.

DR. REICHERT: Because, if this is followed by a change in the ABC control rule, then that's probably what is going to happen. Again, and I said that earlier, what we have now does not include the best available information, particularly the recreational data, and so I feel we're in a catch-22 situation there.

DR. BELCHER: One of the things that I kind of vaguely remember too is, when we were going over the MRIP calibration workshop, that one of the recommendations that was going through our report was that the changes get incorporated at the time that you're doing -- Rather than be reactive and all of a sudden now have to update every stock assessment with the new MRIP numbers, as people were going into their benchmarks, whatever the ones were that were allowing for the change, that that was how they were phasing-in, rather than say that everybody has to bring their ABCs up to re-evaluation and that it was kind of more of a phase-in effect, knowing that, timing-wise, that was what was going to have to happen, because it would cause basically what we're talking about going on right now, and so I don't know if that's maybe the best advice that we can say, to just take a breath and just, as we get to those standard assessments, start bringing the MRIP in at that point, because, if we are going to constantly be quibbling back and forth on, well, we need to do an ABC, well now we're coming up with an ABC control rule, and that's going to result in an ABC, and then we're going to do a stock assessment a year-and-a-half after that, and so there's going to be another ABC, and that's three changes in a matter of two-and-a-half or three years. Are you better suited to say, when we get to that point, we bring the new MRIP numbers in?

DR. ERRIGO: I can be corrected if I'm wrong, but, when you develop the new ABC control rule, I don't think that means that you have to go back to all of your previous ABCs that were put in place and change them based on the new ABC control rule. As new assessments come up, you would use your new control rule to give new ABCs, and so, if you give an ABC for let's say black sea bass by your next meeting, then, in 2021, when the new assessment is done, you would use your new control rule to give a new ABC, and I don't think you have to go back and change all of your ABCs.

DR. BELCHER: I am just thinking, procedurally, if the flip-flops are there -- Depending on the timing of certain things, how many times could you potentially change something over the course of two to three years? Is it better to kind of just wait and integrate as the opportunity presents itself, or are we going to constantly find ourselves in these situations where we're arguing back and to as to should we or shouldn't we and end up frustrating the analysts, because we're concerned about how we're best evaluating the insert of the new MRIP data?

MR. CARMICHAEL: I think, in terms of the control rule, that you guys would make a recommendation, and the council has to take an action to put in your new ABC, and they're going to look at the timing of the new ABC control rule, and they may, in some cases, say this has been submitted and we're waiting on approval and what would this be under the new ABC control rule, and they may wait until that's approved and then submit that. It's the kind of thing that a lot of the work can be done and then we wait for the proper timing to submit things, and so I think they would try to -- They would definitely try to avoid doing say tilefish or snowy grouper, perhaps, and you guys getting recommendations and using the old control rule if we think the new control rule is on the verge of being approved. We would probably just hold off on that a little bit.

DR. REICHERT: What I am hearing you say is that we should not take that into account in our timing of this process or review of others, because then, as the next step, the council will make the decisions that they feel appropriate relative to management decisions.

MR. CARMICHAEL: Yes, and I don't think that there's a lot of value in trying to foresee when that will be approved and then adjust your timing according to that. I think we need to go ahead with the control rule that we have. We never know how these type of changes end up working, in terms of timing, and what may end up being a snarl. As we heard earlier, we now have an unexpected snarl to deal with, with the third-highest issue, that's going to have to be worked out, and I don't know what that's going to entail.

DR. BELCHER: So couldn't we have a similar discussion then about how best to approach integration of MRIP, the new numbers of MRIP, rather than kind of how we're approaching it now, where we're doing this new type of revised assessment to figure that out, and is it better to have that conversation about we know there is new numbers, be it -- I mean, we can talk about that relative to every stock assessment we do, right? It's as good as the day that we do it. There is always new science that's adding, and so, if you want to be critical of one for saying, well, it's old now and we've got new numbers, that's true of just about every assessment we do, and so are we better suited -- Just like we said, updates no longer would apply, and MRIP has to be included under the old vernacular of, in a standard, we're going to apply standards going forward, would that be a better way to just approach it?

MR. CARMICHAEL: I think that's kind of what we've discussed in the past. Like the things that are being done here in 2018, red porgy and amberjack are going to use the revised MRIP data, and king mackerel will when that's done and yellowtail and snowy grouper and golden tilefish and scamp coming up all are going to use the revised MRIP data, and the things in 2020, and so, from this point forward, that's the data that will be used.

One thing that you did add that we didn't kind of talk about before was looking at the kind of revision approach, and so to say what's this assessment do with the old data and what does this assessment do with the new data, and that may have workload consequences, just because of the Science Center's realities in providing the data in both currencies, and, when this was talked about some time ago with the data team, and there was some discussion of doing that for some of the assessments which are now underway, and they were like, well, we're not going to give you the data both ways. If you want to get the new data, wait for the new data. If you want to run it with the old data, we'll give you the old data, but we're not going to turn around and give you the new data in another three months to do another thing, and so there is going to probably have to be some consideration given at the Science Center to meeting that term of reference that you guys suggested

from the data team perspective, and I can't speak for them. That's just something that will go into the term of reference mix, and they will have to calculate it in terms of their workload, but that's why I wanted to say, if we're going to do this workshop, we need to talk about those details.

I think, Carolyn, what you laid out kind of sounds like the direction the Gulf was taking. It's like let's do this more getting into these stocks with the planned assessments. Now, I don't think they were, perhaps, as far along, in terms of doing these revisions as the Beaufort team was, which is why you heard Erik raise some of those concerns about the work that has already been done.

DR. REICHERT: The list of species you just mentioned, did you include red porgy, greater amberjack, and yellowtail?

MR. CARMICHAEL: Yes, those all plan to use the MRIP revision data.

DR. SEDBERRY: So we're thinking a webinar between now and our next meeting or a day added to our next meeting?

MR. CARMICHAEL: Another workshop for your next meeting?

DR. SEDBERRY: We've already added a half-day, haven't we?

MR. CARMICHAEL: It could be a meeting of workshops.

DR. REICHERT: Perhaps a webinar may answer or address the questions we may have, and so I think the workshop is a little premature, and so I would say perhaps -- Because Erik said that the diagnostics are there, and so perhaps, if we can get those, and then schedule a webinar where we can discuss this -- If the committee feels, we can always elevate that to a workshop or a workgroup, or maybe we conclude that there is sufficient information in there to formulate a recommendation, and that's my suggestion or recommendation.

DR. SEDBERRY: I think that's a good recommendation.

DR. NESSLAGE: I think that would be perfectly fine for the full output and diagnostics review. I guess the question still remains about what to do with the MRIP information, or that's totally different, and so I guess I have a suggestion, to see if you like it, and you can shoot it down, but it looks like, potentially, blueline is the big red flag. Perhaps Nikolai or whoever was -- Other folks who were on that working group or panel could give a summary of -- Because, for those of us who don't remember all the details, a summary of how the MRIP data were treated in the past and if that still should apply, if they feel that still applies today with the new MRIP numbers.

I didn't notice any other red flags with the other species, but, if other people did too, perhaps that could be done on the webinar as well, and, if we say, okay, that sounds reasonable, and you all who know more about this have looked at this in great detail, then perhaps we'll be fine with it, and, if we have concerns, then it will get kicked to some other process, and I'm not sure what.

DR. BUCKEL: To Genny's point about the other three species, I looked at the PSEs online, just to see, and I agree with Erik's conclusion on those three species. I think, if we did talk about it, the numbers probably wouldn't change, because I don't see any issues with those species, and

that's likely for the reasons that Erik described, the high number of intercepts, et cetera. For those three, I don't think there's a need to discuss those on the webinar.

For blueline tilefish, in addition to maybe that 2013, which I guess that's one issue, but the other issue is using the proxy species. That's a bigger issue, to me, is how -- It would be nice to hear from the analysts on how those were decided and if we feel comfortable going to management with that, and it was interesting to see what the results were, but that's the only species that gives me pause for management, not necessarily because of the MRIP, but more the proxy species, using the golden tilefish and the snowy for the landings, like the other species for discards.

DR. ERRIGO: There were some difficulties breaking the data up for blueline, but it was eventually accomplished in SEDAR 50, and I can maybe work with the analyst. I don't know if Nikolai was the one who did that, but, whoever did, maybe we can work with them and see if we can address that issue for the SSC.

DR. SEDBERRY: I was just going to ask Erik what it would take to get the diagnostics and additional details together and distributed, so that we can start thinking about a webinar.

DR. WILLIAMS: I would have to see where everybody is with current projects, but I would think it's pretty quick to turn around, a matter of a few weeks at the most, because it's all there. It's just a matter of plopping it into a report and explaining the output, and that's about it.

DR. REICHERT: Thanks for looking into that, Erik. I think I'm trying to think about what I would look at, in terms of the diagnostics, and then what our discussion would be and what would be the outcome of that webinar. For instance, what would be our action items for that webinar, but maybe I am jumping the gun there a little bit.

MR. CARMICHAEL: I think it would come down to you guys deciding whether or not you think that the revised assessments represent best science and are suitable and adequate for you to provide a fishing level recommendation. Then, if so, you would probably ask for what you think you need for projections to support those recommendations that you would then try to get for your spring meeting and be, at that point, considering if you're going to give revised fishing level recommendations.

DR. SEDBERRY: Our action items for dealing with this again in the spring would be pretty much what we have now, except we would have additional detail and information to use to address the action items.

DR. REICHERT: The reason I was asking is we have made -- We have formulated recommendations in previous webinars, and so those could be action items that could be included in the webinar, and we may be able to provide that during that webinar, which would negate bringing this back again to the spring meeting, and that's why I was asking this question, but I am just asking the other committee members.

MR. CARMICHAEL: Like Erik said, some of these have the potential for changing status and changing your application of the control rule, which changes the P*, which changes the projections, and it's always a lot better if you guys can actually look at the projections rather than

just say, yes, project it at F30 and hope for the best, and so I feel a lot more comfortable, if you're going to actually make these fishing level recommendations, that you did that in a regular meeting.

DR. REICHERT: I agree.

MS. LANGE: To the comment that Jeff made a little while ago that it was really only the blueline tilefish that has issues that we're concerned with, is it possible just to have the projections redone for the appropriate control rule for the other three species, or are we going to address all four, like we originally were talking about before Erik raised concerns, Erik Williams raised concerns? Are we still talking about doing a webinar and then add to the next meeting the review of all four stocks, or all four revised assessments, or are we going to assume that the blueline tilefish was the only one that we need to really be concerned about relative to the differences in the data? I'm not sure.

DR. SEDBERRY: I'm not sure either.

DR. BUCKEL: I think the webinar would be looking at the full output and the diagnostics, and so it's a separate issue from the MRIP. Then, maybe for blueline tilefish, there would be that MRIP question in the diagnostics.

MR. CARMICHAEL: I think, for blueline, you commented on wanting to have a bit more detail of how the revised data was developed, and you mentioned the proxies, and so you know upfront that you want more detail on the revised MRIP time series for blueline and how it was derived, and you know that you want to see the diagnostics in detail for all four stocks, and that doesn't preclude that something in the diagnostics may lead to you asking more questions about some of the other stocks, but at least we can tell Erik and them upfront that details on the blueline and the MRIP and the full diagnostics -- I mean, we'll go from there.

DR. REICHERT: I think that's important for our record, because these are important decisions that we are making, and so I think that's why -- I am feeling a lot more comfortable with this approach.

DR. SERCHUK: I just have one other comment, and I don't want to get into the data, but I'm looking at the black sea bass projections and trying to compare the black sea bass projections with the previous analyses that were done, and they are very much different, and they are very much lower for the years beginning in 2019, and I direct your attention to page 12 of the document that has been provided by the Center. That is Table 3.3.

The numbers from the projections that were used last time are in the right-most column, and so you can see that they are 746, 658, 635, and you can compared those numbers with either the L.b or the L. B med, and so on and so forth, and it suggests that, based on this new projection, that, in many cases, that the catches would have to be cut almost in half, and that's a very large change, if I am interpreting the table correctly, and maybe I'm not, but I am suggesting so that seems like a very large difference, and I want to be assured that, if we accept that, which is why I would like this also to be considered within the workgroup, that that would be a sea-level change, and we want to make sure that it's fully supported by the science. It's not a slight change.

MR. CARMICHAEL: To make things a little more complicated on black sea bass, this new one shows that black sea bass is overfished, and so it's going to have to go into rebuilding, which means, before, you were biomass relative to MSST, and that was 1.15. Now it's 0.98. When you go below one, you don't just get back to MSST. You've got to get back to BMSY, and so that's why, in that column right next to that, you see that, even with these lower projections, the probability, in 2023, that you're at MSY biomass is only 0.04, and so you can pretty well infer that the reduction is going to be quite a bit more to get that to 50 percent in say ten years from whenever the rebuilding will start, and that was one of the reasons that the council went ahead and took the preliminary actions that brings the black sea bass harvest level down some based on your recommendations from the pre-MRIP revision assessment, because they see the writing on the wall and realize they need to start bringing black sea bass down.

DR. SERCHUK: That would be true -- If you can bring up Figure 3.1.

MR. CARMICHAEL: Have you got a page?

DR. SERCHUK: Page 13. We have this middle thing talking about SSB just below the MSST level, but, to go to the recruitment, the recruitment now looks like it's improving. It's on an upward swing, and so, quite frankly, that improved recruitment, if it continues, will push that SSB above the line, and so that's another reason that I am concerned about this.

Normally, when you see trends, and we've had two years now of improved recruitment, but we may no longer be, quite frankly, in an overfished condition if that recruitment now translates into spawning stock biomass, and I don't know whether it's at age-three or age-four or age-five or what it is, but the fact is that I would be a little bit circumspect about even going into a rebuilding strategy when the stock is already maybe rebuilding, based on the recruitment. It's just hypothetical.

MR. CARMICHAEL: It's all about recruitment, isn't it, and I think you guys used -- You didn't use the full time series of recruitment when you gave your recommendations last time, right, because of concerns about this trend that you saw in the black sea bass recruitment and it going down and being kind of flat, and maybe it's headed up a little bit more, and so I think this is why it behooves you guys, as Genny said, to look at this in a lot more detail.

DR. SERCHUK: Thank you.

DR. REICHERT: I just want to throw this out here. For blueline tilefish, perhaps it's good to reach out to the Mid-Atlantic SSC, to see if we at least have a member of their group to participate in our webinars. If nothing else, just to know what our conversations are there.

MR. CARMICHAEL: Just keep them in the loop.

DR. SEDBERRY: Next? Let's make sure we have -- Scroll back to the top and just kind of make sure that we've captured everything that we wanted to say, and especially notes about future webinars and workshops and things that we need to get together before we meet again.

DR. REICHERT: I think we still have in here the recommendation of a data workshop type, and I think we -- In further discussions, I think we abandoned that plan, and so we may want to say

that that's -- We recommend a webinar to look at -- Request the full output and discuss that in a webinar, rather than this working --

DR. SEDBERRY: So we're looking at January for that webinar. Is revised assessment BSIA, are we addressing that now?

DR. ERRIGO: That's for the webinar.

DR. SEDBERRY: I see. Of course.

DR. REICHERT: I am not sure what -- Remind me. What does that mean, still viable? I think we need to be a little more specific.

DR. ERRIGO: It was just shorthand, and it was to go over the MRIP data for blueline tilefish and the decisions that were made for that data and are those decisions still -- Do those decisions still hold or can they stay the same or should they be changed?

DR. REICHERT: Okay, and so maybe just like review decisions made or something like that. That's because I know, when I'm reading this later today or tomorrow, it's like now what was that about again?

DR. SEDBERRY: Okay.

DR. ERRIGO: I had this here from earlier, but perhaps we may want to either qualify or just clarify that we're going to go through the webinar process and then evaluate the use of the revision for ABCs.

DR. REICHERT: So it may say that the committee will address the revisions of the ABC following the webinar and will discuss it at their next meeting. The reason I think this is important is because I don't want anyone to read into this that we are currently rejecting these revisions, and so I want to make sure that we are very clear in our language here.

DR. ERRIGO: That's all that I have here. I can rearrange it so that the general comments that apply to all of the species are out in a general section, and then there are some blueline-tilefish-specific things in here. If anyone has anything specific they want to look at for any other species, you can either let me know now or, when I send the notes out, you can fill those in under the particular species.

DR. REICHERT: So we'll address the other two at the webinar or the next meeting, the last two, correct?

DR. SEDBERRY: Yes, and so everything with applying the ABC control rule will be done at the webinar or as a result of the webinar at our next meeting, what you just said. Are we ready for the ABC control rule? This is the Comprehensive ABC Control Rule Amendment, Attachments 17 through 19, and John will give us the council overview.

COMPREHENSIVE ABC CONTROL RULE AMENDMENT

MR. CARMICHAEL: Okay. We'll move on to Topic 9, the ABC control rule. You've got the options paper, and then you've got some details on the risk tolerance method in the overview, and so I'm going to go through the document, and we'll talk about that some, and then Mike will get into the details of the risk tolerance method and the overview, and what we've been trying to do is come up with an example of how the process for specifying risk tolerance would work and what it looks like for our different stocks, and getting your feedback on that will be helpful.

The control rule is Attachment 17, and this is a document that you've seen various versions of it and have been through it several times. There is highlighted sections in here that represent the new materials since you have looked at it last, and so there is general information, and there is some stuff on the timeline, which we've talked about earlier, and we're hoping for approval in December of 2019, but, depending on what we have to do to deal with some of the issues raised here, we'll adjust that accordingly.

This is a comprehensive amendment applying to several plans. The first action addresses the overall control rule itself, and there is the tables here that show what we have in place now, and the issue that has come up, and you see it here in the existing rule with the decision tree, as it's called, where you had the steps that you went through and, depending on how the outcomes go, in one case, you could be, well, the ABC is the third-highest point in the time series, and you would pick 1999 to 2008 as the time series, and then it could also be, in some cases, the median, and this is what we've applied to unassessed stocks that haven't been ORCS or haven't been some of the other methods, and this is the part that -- That is really unchanged in the current rule, as you see down here in Shep's table, as I like to call it. This is the table of the new control rule, and it summarizes it all in one place.

We have the different categories for assessed stocks, which define how you would be applying the P* to the assessment information to get the ABCs, and this is a bit more general than what is in there now, and that is to address a lot of the concerns that have been raised about how specific it is, and it ties your hands, in a lot of cases, and doesn't provide you the flexibility for all the types of situations that can arise in terms of the assessment information.

Then, if you notice here in Category 4, these are the unassessed stocks, and, as you will see, this decision tree part is still in there, and this is very general, and so it could include expert judgment, and I guess that's the gist of it, is that it's expert judgment, and then you have some ways here that you could apply that judgment of data-limited methods, the ORCS approach, the decision tree.

I am not sure if we're ready at this point to think about this. I think what we will do is try to work on this from the plan perspective and think about what some alternatives are for dealing with this third-highest issue, as we talked about, and so there's probably not a whole lot that we can do with that here today.

DR. REICHERT: The third-highest, but perhaps also the timing, that 1999 to 2008, and we may have to get a little flexibility there, because that may depend on specific species, and I know we went through that in the previous workshop, when we were determining the ABC for these species, but I remember that we had some discussion about potentially choosing different timeframes, and so I just want to put a little asterisk there, and that may be something we want to look at also, because this prescribes that 1999 to 2008 timeframe.

MR. CARMICHAEL: Yes, and we did go through that, each species, and I will have to look back and see what we did, because, in some cases, we didn't always use that time series if there were concerns, and I think that was part of the -- That was part of the whole record-building process, and so we should bring that up, too.

DR. REICHERT: To that point, it may be good to look at what -- I know there were specific criteria that we used to pick that timeframe, and so maybe it would be good to look at those criteria and use that rather than a particular timeframe. For instance, it had -- I forgot why we picked that, but --

MR. CARMICHAEL: That's more of clarifying why that is and the flexibility than saying you necessarily want to go in and consider a different period?

DR. REICHERT: No, it's just look at the decisions we made back then, and that can provide some guidance in terms of creating a little bit of flexibility there to decide what the timeframe is.

MR. CARMICHAEL: Okay. Let's move on down a bit. The next highlighted section deals with reconsidering the ABC recommendations, and this is based on recommendations that you guys made and then running it back through the council here at their June meeting, and so we said there may be reasons where the council wants to remand, is the word that's used, the ABC and send the ABC back to the SSC for reconsideration and clarification and further details, et cetera.

One of the things that was discussed was that it would be helpful to get some feedback from the council on what type of circumstances would lead to this. That was your recommendation from the last meeting, and so the list here that has been derived, based on the IPT and the council talking about it, is shown here in the bullets, and some of the reasons would be that new information becomes available after you have given your recommendation, there is a mistake that is found after you have given your recommendation, the council changes the risk determination, the SSC did not address the TORs, you didn't have a majority present, and the justification is not clearly stated.

DR. REICHERT: The SSC did not have a majority, I can't remember that we ever not had a majority, although maybe this meeting, the first day, we came close, but does that -- That basically -- When I looked at it, I thought, okay, that basically means that we don't have a majority and there is no need for us to review a stock assessment, because the recommendations are not done with a majority, or am I misinterpreting this?

MR. CARMICHAEL: I guess you could do it. You could suspend rules, and I don't know if we're even clear on having to have a majority, given that we don't vote and such, but I think it does raise one of the things that it could lead to the council saying, well, you could reconsider it, and it might come up if a minority of the SSC took an action, and maybe a number of SSC members even expressed back to the council concerns with that. It would be a reason to say, well, maybe you need to reconsider this when everybody is there. It could happen.

DR. REICHERT: I understand, but this goes back to we are making decisions by consensus, and so, if there is a group or an individual -- There is an option for a minority report, and the way I read this was if, for some reason, less than half of the SSC members could participate in a meeting,

then we shouldn't be reviewing stock assessments, because we can't make a recommendation, because we don't have a majority.

MR. CARMICHAEL: You are reading too much into this. These aren't mandatory things. These are reasons the council could cite in asking you to remand. This is not a checklist. It's not you have to meet all of these for them to accept it, but these are just examples. You could make a recommendation without a majority and they could accept it.

DR. NESSLAGE: The first bullet, new information becomes available, that's almost always the case, and I think that's a slippery one, and I will probably be ignored, but I would highly recommend that they take that one out. If there is significant new information, they should call for an update of the assessment.

MR. CARMICHAEL: I think, in this case, the way that would work would be the council would be asking you -- They would be going back and saying we've become aware of this new information and we would like you to reconsider the ABC recommendation in light of it, and, if you felt the new information warranted a new assessment, then that's absolutely what I expect you would recommend, and then they would then act on it.

DR. CROSSON: Just to that point, again, the way that John phrased it, saying that these are reasons the council could remand something back, it's not -- We serve at the discretion of the council, and so it's up to them. I don't see them wasting a lot of our time. It costs considerable time and expense for them to convene us to look at something, and so, if they think it's significant enough and we can look at it, and we can say that, no, this doesn't pass the bar for us to make a new change in the ABC recommendation, and we're always free to decline to do that, but I don't see this as a problematic thing. Again, the way it's phrased here, I really like.

MR. CARMICHAEL: The way I see this working is, as we said, you would -- Whatever these circumstances were, it's going to be up to you to figure out, well, what do you need to do to resolve them, and, if a mistake is found and it's in the assessment itself, then you're going to say, hey, we need to have a new assessment done, and we don't want to specify that, because we don't want to be tying your hands, in terms of how you respond.

The next piece below there addresses making it clear your ability to deviate from the control rules. That's in there, and it's part of the Act, but you and the council both said you would like to see that explicitly stated, so there's not any confusion. Then the next one addresses determining the acceptable risk of overfishing, and this gets into the risk tolerance, which Mike will go into detail in his presentation. There is a number of alternatives here. What Mike will do is address the details of how these different risk ratings apply over to the biomass levels and the council's role and your role, et cetera, and so that's a place in there that we're going to review this in October of 2018, which we will do next, and so I won't spend a lot of time on Action 2.

Action 3 is addressing the probability of rebuilding success for overfished stocks, and this is just bringing it full circle, because we talked about overfishing, and we didn't address overfished, and so this is somewhat similar to what is in Action 2, but it addresses the rebuilding situation, and I think we were talking about this some at the last meeting, and it was noted that we needed to add this, and so there's just a lot more detail on this action at this time. I will just say, in general, does

anybody have anything? In looking at this, does anything stand out? Bring it up now, and we'll try to resolve it.

DR. SEDBERRY: I don't see any --

MR. CARMICHAEL: Cool. We'll keep moving along. Action 4 addresses the phase-in, and so this is when there is a big change in the ABC, and it would allow the council to implement that change in a step-by-step basis, and this is some flexibility that is noted in the Magnuson Act, but it needs to be included in the ABC control rule, because, in a way, the council might not necessarily be fully adapting and adopting the ABC that you have recommended, and they need to comply with your ABC, and so this gives a process for modifying the ABC in these interim years where we're taking partial steps, and so that's why it's tied back to different alternatives addressing timing and different levels of reduction that are going to be addressed.

One of the things that we said needed to be addressed in here was dealing with the timing of the assessment process and how all of this fits in with the potential interim analyses that we'll be getting in the future, and we are also addressing some language here about the timing and how the council could handle this to be flexible.

For example, they could pick the maximum period and give themselves the ability to do either a short phase-in or a long phase-in, and then this highlighted section here addresses the timing of assessment information, which is something you guys raised, and it takes time to prepare the analyses, and, if we're doing interim analyses, we might not want a three-year phase-in, because it may not make much sense to do those different analyses if you know you're getting interim information every year. You may be able to do the phase-in and have that just address this part of the planned interim analyses anyway. In other words, I think the interim analyses could make this a lot simpler, in terms of the process.

Then we have added examples of how phase-in affects the overall yield, and the general gist of these is that, if you do phase-in, you are going to have some cost, in terms of your overall yield over the time, and certainly in your out years, which I think everybody here understands. If I catch more next year, I am not going to have as much available to catch five years from now, if I'm in some situation particularly where I am needing to reduce my catch levels, because of effects on biomass and recruitment and everything else, and growth of fish and yield over time, and so these examples are really intended to be able to let the council see what the costs are for these different phase-ins.

These are hypothetical. If this were to be done in a specific stock, there would be an example prepared, an analysis prepared, which did this for the specific phase-in that's being considered, so the council could see its real cost, in that circumstance, and decide if it wanted to go ahead with the phase-in.

I think we've talked about that quite a few times, and then carryover -- This is where there is some unused catch in a year. Unharvested fish could be carried over into the next year, and this needs to be in control rules too, because it creates a situation where, in that year that is receiving the carryover, the allowable harvest could be higher than your ABC.

The council can always do carryover which brings the carryover amount up to the ABC, but in some cases they may want to do a carryover that can result in you being at a higher ABC, and so this gives a process for adjusting that ABC in that single year, and that's why the SSC is weighing-in on this, and we have things like considering the stock biomass level, and these alternatives were re-written a little bit to be more consistent in their wording, because there was some confusion, some where when it will not be allowed, and some said when it would be allowed, and hopefully 3, 4, and 5 now are a little bit more clear.

Some of the options the council is considering is how you apply this to different fisheries sectors. Is this something that's done within a single fishery sector and looking at that fishery sector's landings, or is it something that's done within a fishery sector and looking at total landings of all fisheries sectors? That's where Alternative 4 and Alternative 5 come in.

This is a part that there is a workgroup at NMFS working on, and so there is folks on the IPT that are part of that, and so we're holding off on finalizing the language of these alternatives until we get the recommendations of the workgroup, so we make sure that what we do is consistent with the Magnuson Act, and, Scott, are you on that?

DR. CROSSON: I am on that workgroup that is doing the carryover and phase-in technical memo, and so we're working on a technical memo right now, and we should have it finished up in the next month or so, and then it's going to have to go through the approval process, which I have no idea what that is going to entail, with Headquarters, but that is in the works, and we've got, I think, something pretty nice so far drafted along, and there's a lot of economists on that group, as you might surmise, and so it's coming together pretty well.

MR. CARMICHAEL: So the workgroup is on track, and the approval process is anybody's guess, and that's why we -- We're thinking perhaps in January, and we're hoping that we have it by the March council meeting briefing book, so we can look at it there. That's what we've got our fingers crossed for, and so, again, as I said, that's one of the things that is a bit of a blowing-loose detail, in terms of our scheduling, but it's better to get it right and be consistent with the Act, in the long run. There is probably not a lot to worry about here, because of that.

We just have some more discussion here, which is trying to clarify what the alternatives and actions actually do and what is maybe more conservative than another in how it would be put into place, and the next big step in this document, of course, will be starting to fill in all the other components, the social and economic and biological evaluations, and we're probably getting close to the point where NMFS will give consideration to the type of environmental assessment and impact statement, et cetera, that's needed, and that will tell us what other sections need to be added to this, and so we may have an even more fleshed-out document for you guys in April, if things go according to plan.

That's the last action, and so we'll stop here and see if there is any further questions, and, if not, we will jump over to Mike and the, probably to you guys, more interesting discussion of the risk tolerance approach.

DR. SEDBERRY: At some point, we need to take public comment on this. Would this be a good time or --

MR. CARMICHAEL: Yes, I think it would probably be good to take public comment on this document itself, and then you could take more comment on the risk tolerance approach, since they're kind of separate.

DR. SEDBERRY: Okay. Do we have any public that wish to comment? Seeing none, carry on.

DR. ERRIGO: You guys saw that one table in John's presentation in the document, where it had risk tolerance on one side and biomass on the top, and then, in the box there, it tells you the P* value that might be used for that stock. This is just -- Council staff went through and tried to look at a way of looking at individual stocks and proposing a way of gauging or suggesting what the risk tolerance might be for particular stocks and how we might go about doing that, and so that's Action 2 in the amendment there, where the council specifies the acceptable risk of overfishing, and this has to be done for all managed species, where there are quite a few, and so we thought we would try to help out by coming up with a way of recommending it for each of these stocks based on a list of criteria.

What this does is this risk tolerance helps -- Together with biomass, it helps the council come up with a P* value. What I did was it started with the NMFS PSA approach, the probability and susceptibility analysis, and this is the NMFS version, and not the MRAG, and basically what it does is it takes a set of attributes that are related to the risk of overfishing, and what we did is we modified it so we only are considering attributes that are related to setting the ABC. Specifically, it's the size of the buffer between the OFL and the ABC, and so the P* value, where higher risk is a lower P* value, which gives you a larger buffer between OFL and ABC.

What you do is you go through and you score each attribute for each stock, and it goes through and calculates an overall score for every stock, and it gives you a category of either low, moderate, or high, which fits into the table in the amendment. Each attribute that is in the analysis has a score of either low, moderate, or high, and so there's only three categories that every attribute can be scored, and they're given a numeric value, and so low is a one, moderate is two, and high is three. The attributes fall into two main categories, and so they're these biological attributes, and so they refer to the biology of the stock and then the human dimension attributes, and so the biological attributes are related to the biology of the species, and they basically will only change when you get new information about this, new scientific information about the stock.

The way these work is, the higher the score, if you have like a three, the less vulnerable it is to overfishing, and so the higher the risk tolerance can be, the higher the council's risk tolerance can be, and the higher the P* value would be, and this includes things like natural mortality rate and age at maturity.

The human dimension attributes deal with things like management, the value of the fishery, the desirability of the fishery, any social issues that are involved with the fishery, and ecological issues. The way this one works is, the higher the score, the more vulnerable this particular species of stock is to overfishing, and so it's the other way around from the biological, and so the more vulnerable it is to either overfishing or causing higher socioeconomic impacts, and so the lower the risk tolerance, and therefore the lower the P* value. These attributes include things like the ability to regulate the fishery, the potential for discard losses, what the commercial value is or the recreational desirability, are there any social concerns or importance to the ecosystem, or if there are any climate change concerns with a particular species.

In particular, the ecosystem importance and climate change attributes are treated a little differently than the other attributes. They are more like on/off switches, and so they're either not scored or they're given a value of high, and so a score of three. That's because we found it very difficult to rate what would be a low, medium, or high impact for ecosystem importance or climate change, and so either there was a large -- It had a very large impact, and so it was very important to the ecosystem, or there was a climate change concern, or there wasn't.

The way you get the score for each category is you simply average all the scores from all the attributes within the category, either biological or human dimension, but, if the attribute doesn't have a score, it defaults to moderate, and so, if none of the attributes in a category are scored, if you have no information on any of them, it defaults to moderate. Otherwise, it's not counted in the scoring. There is no score, and so, when you take the average, it just doesn't count in the averaging.

Getting the overall risk score is a little more tricky, because the biological and the human dimension attributes are opposite, and so a higher score in biology is lower vulnerability to overfishing, whereas a higher score in a given dimension is a higher vulnerability, and so, in order to mix them together and come up with an overall score, and I borrowed the equation from the NMFS PSA analysis, which is this thing down here.

The highest score you can get is a three, and the lowest is a one, and so that's where these come in, and so, if your risk tolerance is low, you get a risk score that's greater than two. If it's moderate, your risk will be between one and two, and, if it's high, your overall risk score is less than one, less than or equal to one, and so risk and risk tolerance are opposite.

The biological attributes, I will get into a little more of exactly what they are and what they measure, and they measure productivity, and so, of course, the higher your productivity, the less vulnerable you are to overfishing and the more risk you can tolerate, and these criteria basically came right from the PSA analysis. There are two. There is natural mortality, and so, the higher the M value is, the higher the productivity, and these cutoffs came from the NMFS PSA analysis, and we didn't come up with these cutoffs here.

The other criteria, or the other attribute, is age at maturity, and so, the higher the age at maturity, the lower the productivity. The older you are when you reach maturity, you're below your productivity, and here are the cutoffs here. These are also from the NMFS PSA analysis.

The attributes for the human dimension attributes, the first is the ability to regulate the fishery, and so that gets at how well management can constrain the harvest to the ACL, and so, the better able you are to constrain the harvest, the less vulnerable that stock should be to overfishing, and so we can -- We consider in that the variability in the landings and how consistent the state is with the federal regulations and the amount of landings that occur in state waters versus federal waters, if the overage is due to a change in the ACL mid-season or not, which has nothing to do with the ability of management to constrain the ACL. That's just an artifact, and so we take the into consideration.

A score of low means you're consistently below the ACL. A score of moderate means you only exceed the ACL one or two out of five years and/or, when you exceed the ACL, it's less than 15

percent, by less than 15 percent, and a score of high means you're exceeding the ACL three or more times out of the last five years and/or when you exceed the ACLs by more than a factor of 15 percent.

Here are some of the other attributes. The potential for discard losses, and so, if there is a high potential for discard loss, it means you're more vulnerable to overfishing, and this is caused by either a large amount of discards, high discard mortality, or a combination of the two, and so we look at the amount of dead discards versus the landings and the amount of dead discards as a percent of the total catch, and here are the cutoffs for that, and so it has to do with dead discards and their percentage of the total catch.

The annual commercial revenue, and so how valuable the species is to the commercial fishery, and we look at the percentage of the species annual revenue to the total annual revenue of all species considered in the analysis, and we're looking at this in terms of the long-term risk, and so, the higher the percent of the revenue, it means a larger potential economic impact, and so higher risk, which means lower risk tolerance, and here are cutoffs, and so low is -- A value of low means the value is less than 4 percent of the total annual value, and moderate is between 4 and 10 percent, and higher is greater than 10 percent, and those values were came up with based on the data, and so looking at the data and seeing where everything fell.

Recreational desirability, and so how important it is to the recreational sector, and, to get this, we looked at the percentage of trips that reported targeting a particular species, and so the higher percentage targeting means it's more important to the recreational sector, and, again, we took a long-term perspective on risk. The more important a particular species is, the higher potential impact it would have to the fishery, and therefore a lower risk tolerance score, and here are the cutoffs for that.

Ecological attributes, and so, again, these are the on/off switches. They are either not scored or they have a score of high. It was difficult to develop criteria for three categories, which is why they were scored as either high or not scored at all, and there is very little information for most species, but, if you do have information on it, it's important. It just typically tends to be very important when you know it.

There is the ecosystem importance, and so how important a species is to the South Atlantic ecosystem, and so this can have a large negative impact for species if they are removed from the ecosystem. It has a large negative impact to other species if you remove the species that you're looking at from the ecosystem, for example an important predator or prey species or a reef maintenance or reef builder species, and one of our example species would be red grouper, which is a reef builder.

The other one is climate change, and so any species affected by climate change, which would make it more vulnerable to overfishing, and it would affect productivity or the availability to effectively manage that particular species. For example, if a range expanded or collapsed due to climate change or interaction with new species or a change in habitat availability or suitability for a particular species. For this one, I think we used blueline tilefish as an example of something that would have climate change effects.

Social issues, Christina Wiegand is going to talk about this one, and there is a document at the end of the presentation for everyone to look at for that one. I will have her come up and do that, but I just wanted to show you how the species fell out for risk tolerance after I tried to run them through as best I could, and then I will have Christina come up and talk about the social aspects.

I broke them up into assessed stocks, ORCS stocks, and then these are the decision tree stocks, and so green means a high-risk tolerance, and yellow is moderate, and red is low-risk tolerance species. These are the breakdown for assessed species here on the left, and the ORCS species is on the right, and here are the decision tree stocks, which there were no low-risk tolerance species for the decision tree stocks, and I think that's mostly because a lot of them are either not terribly important, like commercially, or they are not highly sought after, and so they're not important to the recreational sector, they're not targeted, things like that, and so they tend to not fall out in the low-risk tolerance categories, whereas, the assessed stocks, some of them do, especially if some of them are like the ones that are here, the deepwater species or some that are in not so great shape. That is all that I had, and Christina is going to talk about the social issues.

MS. WIEGAND: All right, and so the social stuff was a little bit more complicated. Here, we're sort of focusing on community dependence on these individual species, and there is not really a clear, quantitative way to just identify community dependence across the board, and so, when we were talking about this at the staff level, there were concerns that, if we just looked at relatively high landings throughout the South Atlantic, that you might be missing communities that say have relatively low landings of a species, but are, nonetheless, dependent upon them, because it happens to be a smaller community or what have you.

You also wouldn't be getting at some of the trends in a fishery, changes that you're seeing, or you wouldn't be getting at stuff like, for example, golden crab or wreckfish, where those species aren't likely to be a key species for a whole community, but it's a small fishery, and there are individual people who would be at great risk of changes to those fisheries, and so what I did with this was sort of try to merge the quantitative and the qualitative to come out with one risk tolerance rating, and so, to do that, we sort of start with the quantitative stuff, and, for the commercial fishery, we look at regional quotients, and these are things that we include in all of our amendments, and the regional quotient is simply proportional landings throughout the South Atlantic.

This example right here is specific to black sea bass, and it's just a way to run through it, and so these would be the total landings of black sea bass in Beaufort, North Carolina commercially compared to commercial black sea bass landings throughout the South Atlantic, and that's how we went and identified the top-ten communities for black sea bass in the South Atlantic.

Then, from there, we took those top-ten communities and looked at the vessel local quotient, which is a similar measure. It takes individual vessels and looks at, over the course of the year, how much black sea bass did they land versus how much of every other species did they land and then average those vessels across communities.

Then we set a threshold for dependence, and this one was just sort of arbitrarily set looking at the black sea bass data. Once we have pulled data for all species, we'll be able to sort of better identify the appropriate threshold, but, for the purposes of this example, we said, if the local quotient was greater than 5 percent for black sea bass, those communities were going to be considered dependent upon black sea bass.

Then we moved into some of this qualitative stuff. As you guys know, we've been doing these fishery performance reports with our advisory panels, and now included on the list of questions they get are specific questions about community dependence, asking them to identify communities that are really highly engaged and reliant upon these species as well as whether they are experiencing any vulnerabilities, things like changes in infrastructure, and then how they have worked to adapt to some of those changes.

For example, for black sea bass, when they did a fishery performance report back in November, they talked about how, in Florida, a lot of the guys that have black sea bass pot endorsements are getting ready to sell them. In North Carolina, a lot of those guys that have endorsements are now targeting other species that are available instead of black sea bass. Then, last but not least, we look at how vulnerable the top communities are, and these are just indices that have been developed looking at census data and things like crime rates, poverty rates, and whether a community would be particularly vulnerable to changes in the regulatory environment, and so, as you can see, for the top-ten black sea bass communities, none of them really stand out as highly vulnerable to regulatory changes.

Next, we went into the recreational sector, which is a little more challenging, because we don't have individual-vessel-level data for recreational like we do with commercial, and so, here, instead of the regional -- Well, similar to the regional quotient, but we just looked at the number of black-sea-bass-directed trips in the community versus total black sea bass trips throughout the South Atlantic, and directed trips are trips that are targeting or landing black sea bass.

Then, to sort of get at this idea of local quotient for recreational, we just looked at those top-ten communities, the total number of black sea bass trips versus the total number of recreational trips for that community, and then, again, it will be helpful, once we've looked at all of the percentages for all species, to get a correct threshold, but, for this, we just threw up 65 percent. If 65 percent or more of the directed trips in that community were black sea bass, those communities were considered highly reliant upon black sea bass.

Then, again, the fishery performance reports, the advisory panel members talked about black sea bass charter demand decreasing, particularly in reference to the minimum size limit as well as switching to target sheepshead, or that it's just sort of part of the grab-bag, and it's nothing that a fisherman goes out and specifically targets on a charter. Then, again, we looked at the vulnerabilities, and the only one for black sea bass that is sort of popping up as vulnerable to regulatory changes is Savannah, Georgia.

Then we mashed it all together to get sort of a final risk tolerance rating, and so we set low risk at zero to six communities, seven to thirteen for medium risk, and then fourteen to twenty for high risk, and so I guess that's sort of counterintuitive. High risk would mean you would want to have a low-risk tolerance, and so that little blurb there is meant to just be sort of the summary, and the idea is that, if we get -- Based on the quantitative data, the species that is sort of teetering on low, medium, or high risk could maybe fall into one or two different categories, and so then use that qualitative data to make an argument that would support bumping it up or bumping it down or sort of corroborating the level that the quantitative data has it, and so a little bit more structured than me just arbitrarily saying that I say high risk.

DR. ERRIGO: That's what we have for our proposal for how we might go about suggesting where species might fall in the risk tolerance categories. If anyone has clarifying questions, I would be happy to take them. What we're looking for is suggestions on what people think about the approach and specifics on the cutoffs for the criteria and the attributes, any of that kind of stuff.

MS. LANGE: Just sort of as a baseline, the one from Savannah that was red, the very vulnerable, what is that measuring exactly? How did that get rated that way, and it was for poverty, I believe.

MS. WIEGAND: Yes, that's for poverty, and I will admit that I am not the one that came up with these vulnerability indices. This is something that Mike Jepson and Lisa Colburn worked on quite a bit, and so I can't tell you exactly what variables from the census are pulled to create that poverty index, but it's stuff they have identified through the literature, and so it's things like increased poverty rates, and I'm not sure specifically which variables are going into that poverty index.

MS. LANGE: So the thought would be that extremely poor people wouldn't be able to get out fishing for that particular species if it was something that was offshore or you needed to go on a charter vessel or something?

MS. WIEGAND: Correct. They would be more vulnerable to these changes in regulations and wouldn't necessarily be able to adapt as quickly.

DR. REICHERT: I was surprised that there were no South Carolina communities for black sea bass trips, and I am just wondering why that may be, but that's just something that struck me.

MS. WIEGAND: Well, that's one of the reasons that we wanted to include some of this qualitative data, because, when we were pulling those top-ten communities, it really is just proportional landings. If you have high landings compared to the rest of the South Atlantic, then you're going to pop up on that list, but we're likely missing some of those smaller communities that black sea bass is important, but, comparatively, they don't see higher landings.

DR. SEDBERRY: Any other questions?

DR. YANDLE: Thinking about that one, you're saying that it's a community's landings relative to the proportion of other communities' landings, and is that correct?

MS. WIEGAND: Relative to the total landings, and so landings of black sea bass in Mayport, Florida, versus all landings in the South Atlantic.

DR. YANDLE: Okay, and so I'm assuming that data is probably not available then where you would be able to go say that this town's landings of black sea bass as a percentage of their total landings, that community's total landings, because that would be a way of getting at not relative to other communities, but that community on its own and how dependent is it on a particular species.

MS. WIEGAND: Compared to the dependence on all other South Atlantic communities, and so to do the proportion for all of the communities and then identify those that have the higher --

DR. YANDLE: That would be another way of doing it too, which would probably be better than what I was thinking.

DR. SEDBERRY: All right. I don't think there's any additional clarifying questions. Is there any public comment on these presentations? No public comment. Any other discussion?

DR. YANDLE: Can I just say more thing? That was I really like how this is providing a way of incorporating that data, that we're going back to the APs and getting that. I love how this is going through and actually formally incorporating that into this process, and I think that's exactly what we were hoping we would see when you started collecting that data.

DR. ERRIGO: Just as a point of clarification, the species that I listed with the low, medium, and high-risk tolerance categorizations did not include the social categorizations yet. They haven't been done for all of these species, and I actually didn't have the black sea bass yet when I did this, and so these are all the attributes except the social issues attribute, just for everyone to know.

MS. WIEGAND: It took us a while to figure out how exactly to do the social attributes, but what we did for social does match the ranking for black sea bass seen here.

DR. ERRIGO: This is a lot to swallow, but what we are looking for is -- It doesn't have to be this second, if nobody has anything, but the cutoff -- The criteria, if anyone has suggestions of how we might go about getting those different cutoffs, like these things, where -- So recreational desirability have the cutoffs at less than 5 percent, between 5 and 10 percent, and greater than 10 percent of the trips that reported targeting a particular species.

I came up with those based on looking at the actual data, the percentage of trips by species, and I'm just going to look at what was there, and, if I was just going to do it without looking at anything I would have said, well, you know, if 50 percent or more of trips were targeting this species, then it's probably very -- That probably would have included nothing, and maybe dolphin.

That's probably the only species that has been very high proportions of anything, but there are species that are important, but it's just that, in the grand scheme, when you're proportionally looking at them and there is one or two species that have a very, very high number of trips that are reporting targeting -- That's the other thing. A lot of people will report targeting one or two main species and then wind up catching a lot of other things, and so I went through and looked at what the data showed, but, if that's not an appropriate way of doing it, I am more than happy to take that advice and change how this is done.

DR. SERCHUK: Just like in feeding studies, I think you're going to get your generalists, and you're going to get your specialists, and I think, in terms of vulnerability, you have to think about in those terms. It's the ability for the generalist -- It's the ability to switch, and I'm now fishing on this, but, if this is not in abundance, I'm going to go to that, and then there are others that basically say, well, this is the gear I have, and I'm going to this, and I'm just wondering how you made those tradeoffs when you talk about vulnerability, because they are two different strategies for income, for making a living.

In Maine, they call it making the rounds. They say, well, in this season, I fish this, and then I fish this, and then I fish this. They are all important, but maybe at all low levels, and so I think you've

got to be very careful about the vulnerability. I think you've thought about it, but some communities may be generalist communities and some may be specialists, but they're both vulnerable, to a certain extent, if their ability as a generalist is impeded by not being able to switch, because maybe the abundance is not there, while others are highly dependent on a particular species and maybe can't change.

They can't change because of the gear, or they can't get out to the grounds, they are restricted to certain areas, and so I'm wondering whether those are issues you have thought about, in terms of vulnerability, because, quite clearly, there are different ways of trying to make a living off of these living marine resources.

DR. CROSSON: I have to put on the cranky economist hat. Getting to Fred's point about generalist versus specialist, I guess putting in a point for specialists, I think about -- Like, for the snapper grouper fishery, off the top of my head, I think the two most profitable of those fisheries are probably wreckfish and the golden tilefish longliners, and they both make sizeable profits, somewhere in the 20 to 25 percent range, at least, if not more, and, because of that, they tend to have much -- The reason they're able to make those profits is because they have much lower costs, because they are running a more efficient operation, because the management structure allows that.

What that means in terms of some of the economic numbers that I saw up there earlier is that they're going to have a lower economic impact. They are employing a lot fewer people to generate a lot more return on investment, and that profit is actually a really strong benefit for society. Those are resource rents that are being generated that are creating wealth that is flowing out into the general economy, but it's not going to show up in the economic impact numbers that you see.

some degree, profitability and economic impact are almost diametrically opposed, but it doesn't mean that the profitability is something that is not of value, and so I worry a little bit about this, with like being careful that you're not punishing some of the most efficient fisheries that we have in the South Atlantic, because they tend to employ fewer people and because they tend to have smaller crews, because, again, they require less economic input to generate more wealth, and I sent that memo out to the SSC recently that was showing some of the different returns in some of these different fisheries that we have in the South Atlantic, and I think it's something in the future that maybe we might want to considering beyond just economic impact or just gross revenues, is thinking about the net revenues and thinking about the profitability of some of these fisheries and how those things are changing over time and the degree to which that -- Well, I will just leave it at that, but, the degree to which that reflects which fisheries are important, I think is something that we have to consider.

DR. ERRIGO: One thing I struggled a lot with was the impacts to -- Large impacts to small portions of the fishery versus small impacts to large portions of the fishery and then, of course, larger impacts to large portions of the fishery and how all of those fit into risk tolerance and these ABCs and how that all fits in.

The hope was, hopefully, that, when you combine all the attributes, that all of that gets put together, and hopefully it comes out, but I am not sure that we're able to capture all of it, and feedback on some of that would be great. Looking at the economic attributes, if you have a fishery where there is only let's say three guys who are fishing it, but their entire income is completely dependent on that species; however, in the grand scheme, across all fisheries, it's a very small proportion, it's

going to come out small, and the impact is going to be low. Your risk tolerance is going to come out being high based on that one attribute.

I am hoping that, together with the other attributes, that would -- It would come out, but I don't know if it does, and this is supposed to be across the entire South Atlantic, looking at everything, but I am not sure what would be more important to look at. Would it be percent of revenue to all commercial revenue or percent of proportion of your revenue for a particular species, the proportion of that species' revenue on trips that caught that species compared to all the other species that were caught on trips that caught that species, and so how important that particular species is on trips, because that was another metric that I had that eventually I wound up abandoning, and so these are a lot of the things that we struggled with, what to use, what gives us what we're looking for, without masking an important factor.

DR. CROSSON: I guess maybe I'm just -- Maybe I just sort of reacted more to seeing potential economic impact graphs, and that's probably what got the hairs going up on the back of my neck. I think those fisheries that I mentioned -- I mean, when you actually look at like wreckfish, for example, I think it's actually 10 percent -- Probably between 10 and 15 percent of the total revenues for the Snapper Grouper FMP are probably coming from wreckfish. People always, well, it's a small fishery, and it's not in terms of the amount of revenue that it's generating, but it's just being done by a handful of guys.

Golden crab, I'm not sure, off the top of my head, what the golden crab revenues are, but that's a pretty sizable fishery, even though, again, it only employs probably ten or eleven fishermen, grabbers, and so I guess this is probably as good of an approach as any, and, like you said, it's part of a larger number of variables that are in here, and so I recognize that it is complex, and I didn't mean that to be too critical of you, Mike.

DR. ERRIGO: No, I'm not taking it as criticism. I am really asking, because I struggled with what to use. The other question I had was we looked at snapper grouper and dolphin and wahoo, and, when I looked at like trips, recreational trips, I looked at everything that was in the analysis, and so I combined all the trips, all the targeted trips, all the dolphin and wahoo and all the snapper grouper trips.

Should I separate out let's say bottom fish from pelagics? Do you think that might be a better way of going at this, because they take up different habitats? I could do it by FMP, but then dolphin and wahoo are by themselves, and so that's kind of -- I would be looking at the proportion of trips targeting dolphin or wahoo of all the trips targeting dolphin and wahoo, and so it would be kind of an odd way of looking at it. I could do it across all species, and any help in that respect would be great, or opinions on that.

DR. YANDLE: One suggestion I would make is, much like other things, you need to be thinking about what's the level of aggregation that you want, and are you really wanting to talk trips? Are you wanting to talk individuals or communities? I think, once you start identifying that, then you might find some of your measurements fit into place a little bit more easily, and that may also help you more with what you're trying to get out of the analysis, or maybe you decide that you -- I am not quite sure where I'm going with that, but I think you almost need to make some of those decisions, and then that will help guide you with some of the instrumentation.

DR. ERRIGO: I was always looking at -- So these are to inform decisions on helping to set ABC, and so it was across the South Atlantic, and that's why we were looking at, for recreational desirability, trips across the South Atlantic, when I was looking at that aspect.

DR. YANDLE: But then, sort of in this other portion of it, it looks like you have moved your aggregation from the trips up to communities, and you're sort of counting how many communities are at what level of impact as one of your measures. I can see arguments for either, but, whichever you choose, I think there needs to be some level of consistency in recognizing that the level of aggregation you choose is going to lead you to different places.

DR. SEDBERRY: Well, have you gotten what you need? I mean, the action items for this were just to kind of discuss, review and discuss, the presentations and fill in any additional recommendations.

DR. ERRIGO: I think I'm good with the risk tolerance analysis, and I think John got whatever feedback he needs for the control rule.

DR. SEDBERRY: Well, we're kind of at a crossroads here. Did you have something, Marcel?

DR. REICHERT: A quick clarification on Slide 8. I just looked at my notes, and there is moderate only exceeds ACL one or two out of the last five years, and then "and/or" -- Do you need some feedback from us whether that's "and" or "or"? I know this goes back to details, but I think it makes a difference.

DR. ERRIGO: It was -- I had it that way depending on the species, and so, if you -- For a certain species, if it's like for high, it might only exceed the ACL two out of the five years, but, when it does, it exceeds it by more than 15 percent, and so I was thinking that, because it's exceeding the ACL by quite a bit, that perhaps it shouldn't fit under moderate. It should be a high -- It should go under the high category, because it's such a large -- It's exceeding an ACL by such a large amount, because, here, we're looking at the ability to regulate the fishery.

It was specific to -- It was going case-by-case, and so it didn't always make a difference. A lot of times, the -- For low, it didn't matter. As long as it was below the ACL, it was below the ACL. For moderate and high, it was a way to try to look at it only exceeded the ACL once or twice in the last five years, but, when it exceeded the ACL, it exceeded it by like 50 percent, and so there's that -- Is that really a moderate category or not?

Having just an easy rule of, oh, if it's once or twice in the last five years, then it's moderate, and, if it's more than that, it's high, but, if it exceeded the ACL by such large amounts, perhaps we should reconsider where it falls, and that's why those criteria are in there. Perhaps 15 percent is not the right cutoff for them.

DR. REICHERT: Yes, and I think I understand that, but is your intention to say, okay, it's only moderate if it's two or three out of the five years and less than 15? Do you know what I mean?

DR. ERRIGO: Yes.

DR. REICHERT: If it's 5 percent, would that then be a low, or would it still be under moderate?

DR. ERRIGO: If it's exceeding the ACL by 5 percent, that would be moderate. If it exceeded the ACL two years out of the five by 5 percent, that would be moderate. It wouldn't be low. Low is if it didn't exceed the ACL at all.

DR. SEDBERRY: How about if it exceeded the ACL less than 15 percent throughout all of those five years? That would be moderate, and, if it exceeded it by 15 percent for all of those five years, no matter how many years it --

DR. ERRIGO: For all five years?

DR. SEDBERRY: I mean as a -- All five years combined, yes, and not for each year, but for all five years.

DR. ERRIGO: That's in a given year.

DR. SEDBERRY: That's why I was little confused by the "and/or".

DR. ERRIGO: I'm sorry. Yes, this is written in this shorthand because, in the Excel spreadsheet, it's trying to fit inside of a cell, like in a cell, so that you can look at it while you're trying to fill out the boxes, and so that's why it's all like shorthand. What it means is, when it exceeds the ACL, if it's exceeding it in a given year by more than 15 percent. It's not overall.

DR. SEDBERRY: Okay. Any additional discussion on this risk?

DR. SCHARF: Just a question for Mike, and this may be a really stupid question, and so forgive me, but is there any particular reason why the scores have to be opposite, in terms of risk tolerance, one to three and three to one? Why can't they be just the same and make it easier to interpret, but I'm not sure why they have to be the opposite. I was curious if there was a specific reason.

DR. ERRIGO: I suppose they don't -- We could organize it so that they're not, but it's intuitive. Intuitively, it makes sense that higher productivity is lower vulnerability, but these are -- This is a human dimension, and it's roughly equivalent to susceptibility in the PSA analysis, and so higher susceptibility and higher vulnerability, but higher productivity and lower vulnerability, that's how it's set up. I actually don't know, if I just reversed everything, if it would work out the same or not, because, if I made everything the same, that means there are just the two biological factors, and then everything would just average together, and I don't know if the scores would come out the same or not.

DR. SHAROV: You are calculating the square of the difference, and so I don't think it would make any difference, but I would agree with Fred that making them in the same order would have been -- To me, it would certainly be much easier to follow than having them opposite, and so it's a minor thing, but it's kind of -- I agree.

DR. ERRIGO: I could probably just change just to reverse everything, and then it would be a simple average.

DR. SEDBERRY: Any additional discussion or questions? We have gotten through all the agenda items that we had scheduled for today, and so we could try and take up one of the items that we have for tomorrow, or we could wait until tomorrow, when we have a fresh brain, and use this additional time we have left over at the end of the day here to kind of review the notes we have to date and make sure we have everything. We could just start at the beginning and scroll through it and make sure we've gotten everything down and that we have what we need to prepare the report, which is what I would like to do, if everybody agrees to that. Okay. Let's do that then.

We still have about forty-five minutes left, and so Mike distributed the notes from the first day yesterday evening, and I think he got some comments back, but we can look at those and make sure everything has -- Everything that we want in the meeting report has been covered.

REPORT AND RECOMMENDATIONS REVIEW

DR. ERRIGO: Would you like me to email out everything that I have for today? This way, everyone has it in front of them.

DR. SEDBERRY: Yes, and so what you have today includes yesterday and any changes that have been made, or is it just --

DR. ERRIGO: I'm sorry, but I haven't had time to incorporate the edits yet, and so it's just my notes without the edits from last night, if that's all right.

DR. SEDBERRY: That's fine. Do you think that's a good way to do this, Marcel?

DR. REICHERT: We could go through this while our memories are still fresh, and so I think it would be good to just take a quick look.

DR. NESSLAGE: If we already suggested edits, do we suggest them again, or --

DR. SEDBERRY: No, I don't think you need to suggest it again.

DR. ERRIGO: I will make sure to incorporate them tonight, unless you want to suggest something different. Otherwise, I will make sure to get them in there tonight.

DR. SEDBERRY: Back to day one, this is really the overview document with our notes inserted in italics for each action item.

DR. ERRIGO: I suppose, since we're going to go over everything from the beginning, if there is something that I haven't incorporated, you can just let me know, and I will put it in there now.

DR. SEDBERRY: Okay. The first thing we reviewed was SEDAR activities, and one of the big items that came out of that was kind of a summary table of what's on the schedule and what SSC members have been identified to participate in that, so that we can kind of keep track of all the things that we're doing and not get too far ahead of ourselves.

Also, I think Fred had made a suggestion about a term of reference regarding the MRIP data to apply it to the existing assessments, so we would have kind of a comparison to see how -- Kind of give us a feel for how the MRIP data are -- How the new MRIP data are affecting the outputs from the assessments, and so we've got those notes in there. Recommend the SSC review studies, and the gag identification problem and how that affected black grouper, and so we also want to look at how identification problems with black grouper affect gag. Then terms of reference.

DR. REICHERT: Can you scroll up real quickly? The review, that was something that I proposed, and I think Carolyn made a good point that it may not even be necessary if those studies are extensively reviewed during the research track or the data workshop. This was more relative to what we did this meeting, and there may be other studies that may come up that may have a significant impact, and so that was the background for my suggestion.

DR. SEDBERRY: So you think that's no longer needed?

DR. REICHERT: I just want to perhaps -- I will provide some language that we can include, but I just want to mention that we had a little bit of a discussion on that one.

DR. SEDBERRY: Okay. Terms of reference and assignments for scamp.

DR. REICHERT: Remind me when -- Did we talk about that general schedule for that webinar?

MS. BYRD: The general timeline is the stock ID will be the spring of 2019, and the data workshop will be late October of 2019, and the assessment would be a webinar going into 2020. The review workshop would be in October of 2020.

DR. REICHERT: When would that webinar --

MS. BYRD: If you were interested in the ADT, I think the first webinar would likely be summer of 2019.

DR. REICHERT: I was thinking about that joint webinar with the Gulf SSC.

MS. BYRD: John is working on that, and we're hoping by the end of this year we'll know more about that.

DR. SEDBERRY: You are on the ADT, or sitting on the ADT, participating on the --

DR. REICHERT: (Dr. Reichert's comment is not audible on the recording.)

MS. BYRD: The council won't making appointments to the ADT probably until March of 2019, and they're going to be making stock ID appointments in the summer of 2019.

DR. SEDBERRY: As we've been doing, the stock assessment will begin with a stock ID workshop, and so, if anybody is aware of any scamp data pertaining to stock ID, tagging data or genetic data or whatever it might be, let Julia know, and if anybody else is interested in participating. We reviewed the terms of reference for golden tilefish and recommended including "golden". Then the snowy grouper terms of reference.

DR. REICHERT: (Dr. Reichert's comment is not audible on the recording.)

MS. BYRD: To clarify, for snowy grouper, you all want that added into the terms of reference?

DR. REICHERT: Perhaps we could add that, specifically add that.

DR. SEDBERRY: So add that. Okay. There you go. Then SEDAR projects.

DR. REICHERT: So this is the new table that --

DR. ERRIGO: This is the new table, but I haven't put in your corrected table, which I will do.

DR. SEDBERRY: We need volunteers for SEDAR 66.

MS. BYRD: We don't have the schedule. We have a preliminary schedule. I don't know if that will make it more challenging to get volunteers. Once we have the schedule, I can make sure that Mike sends it out to you guys. If you know you're interested, you could just let me know.

DR. SEDBERRY: Okay. Then SEDAR 68, there's your chance to get in on the ground floor of a research track. You're looking for suggestions on participants there?

MS. BYRD: Yes, and, again, we don't have the schedule yet. Once we have that finalized, we can make sure you all get a copy.

DR. SEDBERRY: Okay. Oh yes. I thought this was just a nightmare that I had last night, but now I remember that we actually did this.

DR. REICHERT: I think we mentioned it yesterday, but I would really like to change the focus on we only reviewed the red snapper portion. We didn't focus on that, but we only reviewed the red snapper portion.

DR. SEDBERRY: Yes, that's true, although we do have a recommendation later on about using the other parts of it, which is fine, I think.

DR. REICHERT: But I don't think that we really discussed that, and so I just want to make sure that that's in the report.

DR. SEDBERRY: The second and third bullet?

DR. REICHERT: I think we should combine those, and then I think one of the things we also discussed is that is relative to the video information. Please correct me if my recollection is different than --

DR. ERRIGO: Yes, they are relative to -- This bullet is basically what the study came up with, that they are different, because it was relative to the video, and so it showed that the chevron trap had relatively -- It had a different size selectivity than the video.

DR. CROSSON: Again, I don't understand. The third one just seems repetitive of the one to the -- I would just get rid of the third one. What is it adding that the second one doesn't already include?

DR. ERRIGO: I don't even think these were next to each other when I originally wrote them. I think I deleted one or two bullets in between them, and so I can just take -- I can take this one out, since the hook-and-line gear wasn't even part of that anyway, and just say that.

DR. REICHERT: Again, this is wordsmithing, but just correct that it maybe represents the true population distribution or something

DR. SEDBERRY: Yes, assuming -- There you go.

MS. LANGE: Does that represent or capture the true population?

DR. SEDBERRY: I think we mentioned the flat-topped selectivity earlier, and maybe we can delete that, because we say it again, and so delete that. We do say it later. It says there is evidence from the study that the selectivity curve for the chevron trap was not flat-topped. However -- So this is a little more detail.

DR. REICHERT: I would move that up to under that other -- That all addresses that same --

DR. CROSSON: If you go back up just a little bit, assuming stereo video captures of the population, we didn't necessarily agree that that was the case, right? The way I guess I should read that, it just means that --

DR. ERRIGO: That was the assumption that study made, because all of the gears were compared to the video.

DR. CROSSON: Okay. The point above, where we basically say that it's a positive -- That one, that it's a well-executed study, I would put that as the very first thing in this section.

DR. SHAROV: I don't want to re-open the discussion, but I'm reading this and still thinking that maybe we overcomplicated some conclusions here with respect to the -- We're saying that the largest uncertainty is that this potential analysis is only on the size-based selectivity and it's not accounting for age structure, or it does not provide the age selectivity, per se, and, like I said yesterday, it's a size-based process, and I don't think that fish that are getting into the trap or out of the trap or whatever -- That their behavior is based on their age or experience.

Most likely, it's size-based, but think of it. In the current model, and correct me if I'm wrong, as everybody says, there is a selectivity. There is an age-specific selectivity curve, which is -- This is a single curve that is being estimated for each of the -- Specifically for the trap and video index. In any case, for each of these surveys, we have a selectivity curve, right? Therefore, the conversion of the size-based selectivity curve into the age-based selectivity curve here would seem to be a straight exercise and pretty much equivalent to the derivation of a single age-specific selectivity curve.

DR. SEDBERRY: Except for the variability in size at age that the species shows.

DR. SHAROV: Well, certainly it's inherent there, but there is a variability of size at age in availability of fish to the fishing gear as well, and so, when we generate a single age-specific selectivity curve, that variability is included there as well. You are essentially accounting for the average availability of the fish within each size, within each age group, which has the variance around this estimate, and it's centered on something, which this would be -- If it's a size-driven process, there would still be an average size of fish at age. I don't know if this would help -- If this comment helps with generating the final report, but it doesn't -- It does seem to me that it is not necessarily a significant complication, the fact that we don't have the age information in this case. If the group disagrees, that's fine, but --

DR. ERRIGO: I see what you're saying, that perhaps this portion of this comment can be removed, just because this study looks at size selectivity and not age selectivity, and that doesn't mean that that means that this is the largest uncertainty with regards to its use.

DR. SEDBERRY: It's an uncertainty.

DR. REICHERT: Again, this is wordsmithing -- Sorry. Forget it. I was misreading it.

DR. SEDBERRY: Go ahead, Marcel.

DR. REICHERT: The SSC recommends evaluating whether the chevron traps and the video should be combined as a single CPUE index, I think that evaluation was done, and I would say that I think what we -- Again, correct me if I'm wrong, but our intention is to look at this selectivity issue and see whether that may invalidate combining those two indices into one, or something like that, because I think that evaluation was done. That's why we are currently having a CVID index in our assessment, and so maybe we can -- Again, this may be a little bit of wordsmithing, but I want to make sure that we capture what our actual recommendation is. Does that make sense?

DR. ERRIGO: Something closer to this?

MS. LANGE: I had mentioned this to Mike earlier today, but the point here is discuss recommendations for including these findings into the interim analysis for red snapper. It's straightforward, and my understanding was the SSC does not recommend inclusion of these findings in the analysis for red snapper, since they're based on a benchmark assessment, and a benchmark assessment incorporating these findings has not been run, as opposed to the first bullet that's there and its sub-bullet. The bullet that was there is a statement of the fact that Erik had told us yesterday -- But it doesn't address whether or not we're recommending that it be included. Just a benchmark assessment incorporating these findings has not yet been run.

DR. SEDBERRY: Okay.

DR. CROSSON: Thank you, Anne. I like that. I think it's important to put that point out first.

MS. LANGE: It says do we recommend this, and the answer is, no, we don't, because of --

DR. REICHERT: Did we at all talk about whether or not it is possible to use two different selectivities in one index? I don't think we discussed that, did we? Okay.

MS. LANGE: To your question just now, I thought that we did mention or discuss briefly that, if they were in fact two different selectivities, then we really couldn't, and shouldn't, combine the -- The CVID would not be valid if the video had a different selectivity, seeing everything, than the chevron.

DR. REICHERT: Yes, the current CVID, yes.

DR. ERRIGO: That was where this ultimately came from. I can elaborate, if you would like.

DR. CROSSON: Because there has been confusion in the past about our ABC recommendations, do we need to make a statement in there that our ABC recommendation from our October -- Wait, it's October now. Our May -- Because there has been confusion in the past about our ABC recommendations, should we put a simple statement in there saying that our ABC recommendation from our May 2018 meeting still stands as the current ABC recommendation to the council?

DR. REICHERT: I assumed that, as we long as we don't provide an ABC recommendation, then the ABC recommendation on the record stands, and so I think this may be redundant.

DR. CROSSON: I would have agreed in the past, but, after our experiences before, I would like to make sure that it's in there.

DR. NESSLAGE: We are not redoing that workshop, that working group.

DR. REICHERT: Red snapper, John, remind me. When is that on the schedule, and what is it? Red snapper, the next assessment?

MS. BYRD: It's 2020.

DR. REICHERT: 2020, and it is a --

MR. CARMICHAEL: (Mr. Carmichael's comment is not audible on the recording.)

DR. REICHERT: We haven't decided whether that should be --

MS. BYRD: A research track or operational. I think further discussion is needed.

DR. REICHERT: Do we stand by our recommendation that a standard assessment should be conducted as soon as it can be incorporated?

DR. CROSSON: I would default to the Steering Committee and the council and all of the rest about when they want to schedule it. It's up to them to choose the priorities, given the limited capability that exists, and so it's up to them to figure out, and I always hate putting anything up there that tells the Steering Committee or the council which one to prioritize, because that's their discretion.

DR. REICHERT: But, the way it's written, this is an SSC recommendation, and so, if we want to add to that, we leave this up to the Steering -- If we are comfortable that we leave this up to the

Steering Committee, I think we should include that. Otherwise, this will be a recommendation to the council.

DR. CROSSON: Take out the phrase "as soon as it can be incorporated", and so it should be conducted -- A standard assessment should be conducted within the SEDAR schedule to address that, and I would just leave it up to the Steering Committee and the council. Is that poorly worded then? Help me out. Thank you, John.

DR. REICHERT: Remind me, Mike. The last point, to add as terms of reference for upcoming assessments, what are we asking to add?

DR. ERRIGO: For these -- It says to develop a process for conducting these investigations into the stocks the SSC would like to investigate in further detail, and so it was red porgy and black sea bass, and the suggestion was to add a term of reference into the upcoming --

DR. REICHERT: So that refers to the three above points.

DR. ERRIGO: Yes, it refers to adding a term of reference into the red porgy and black sea bass assessments.

DR. NESSLAGE: If Mike goes back and takes a look at these and black sea bass -- If he identifies something with black sea bass, will that go to our webinar that we're going to talk about black sea bass? I would hate to find out afterwards, and it might be good to coordinate on that one, or let Beaufort lead on it. I don't know how you would -- There is no sense in redoing that same analysis if the Beaufort crowd is going to address that at whatever webinar we're going to have, and my brain is dying, but I will just save you some work, Mike.

DR. SEDBERRY: I am going to suggest that, since these notes are from today and no one has -- They're really just kind of our first attempt at scribbling something down, that maybe we do them tomorrow, after you have distributed them to the group, after you do whatever it is you usually do.

DR. ERRIGO: Right, and remember this happened before the discussion of the revision assessments, and so someone had mentioned that there was a huge jump in the black sea bass discards and perhaps we should take a look, and then the revision assessment discussion occurred, where we're going to go back and look at all of the revised MRIP estimates in regards to the revision assessments, and so perhaps that will be taken care of there, and maybe that's what this is, and we can take it out of here, or it could be just left there and said that, in the revision assessment, we'll take a look at that, but this happened before that discussion, and so that's why it's there.

DR. NESSLAGE: If you're going to be doing some in-depth diving, I don't know if Beaufort was planning on doing in-depth diving for anything but blueline into the MRIP data, and so I guess I'm just saying that coordinating would be good, because I think some of us do have questions about the black sea bass MRIP data, even if Beaufort doesn't, and so I think it would be very valuable, but I would hate for the work to be done twice by two different people. Does that make any sense? It totally makes sense given the order of the conversation today, but it would be good to get with Erik and figure out what they plan to do.

DR. SEDBERRY: Okay. Well, Mike will send out the notes this evening from today, and we will take up tomorrow with the size and bag limit analysis, and we'll hopefully finish everything up and have a chance to review these notes from today tomorrow at 8:30. Until then, we are recessed.

(Whereupon, the meeting recessed on October 16, 2018.)

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OCTOBER 17, 2018

WEDNESDAY MORNING SESSION

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The Scientific and Statistical Committee of the South Atlantic Fishery Management Council reconvened at the Town and Country Inn, Charleston, South Carolina, October 17, 2018, and was called to order at 8:30 o'clock a.m. by Chairman George Sedberry.

DR. SEDBERRY: Good morning, everybody. Welcome back to the fall meeting of the SSC. I want to thank everybody for their efforts over the past couple of days, and we hope to be finished today by noon. Mike sent out the notes from yesterday and the day before in a consolidated document last night, and so please check that and edit it as appropriate, particularly those of you who had those sections assigned to you.

This morning, the first thing on the agenda is the review of the new bag and size limit analysis methodology, and we have presentations from Mike and Marcel, I believe, and this is Attachments 20 through 23 in the briefing book, and Carolyn, Jeff, Eric, Yan, and Fred Scharf are the note-takers for this session. Thank you.

NEW BAG/SIZE LIMIT ANALYSIS FINAL REVIEW

DR. ERRIGO: First off, you should note that the BSIA bullet-point has reared its ugly head again. However, this is directly relevant to the council making management decisions. This analysis will eventually be used for analyses in an amendment that might go in front of the council, and so, therefore, this directly relevant to the council making management decisions, and so a little different than our last BSIA issue, and so hopefully a little more straightforward. I will try to get through this as clearly and quickly as I can, but, unfortunately, if you didn't get an excellent night's sleep, this may inadvertently put you to sleep. Okay.

This particular -- It's a bag limit and size limit analysis, and it was put together for specific circumstances, and so we have plenty of analyses that look at decreasing bag limits and increasing size limits, which are basically restricting what might be in place currently. However, we don't have any analyses, let's say sufficient analyses, or ways of looking at loosening regulations, and so increasing bag limits or decreasing minimum size limits, and, basically, if you're in a certain situation and you loosen regulations, how many more fish can you add to the landings, and so what we need to know is how many discarded fish under our current regulation can you add back into

the landings, and so how many are legal, how many discarded fish are legal, that you can add back into the catch when you loosen regulations.

Here, I'm using black sea bass as an example, because this is what sparked this whole conversation, because there was a point where we were looking at increasing the bag limit for black sea bass, and this is using data back from the 2013 update, and what it does is it uses recreational trip-level data, and this particular example uses trip-level data from 2013 and 2014, and I used MRIP intercept data and headboat data from the Southeast Regional Headboat Survey. The data that I'm using ranges from Cape Hatteras, North Carolina down to the Miami-Dade/Monroe County line, and that's the South Atlantic Council's jurisdiction for black sea bass.

The bag limits that I was looking at, and, at the time, this is what was being analyzed for black sea bass, were bag limits ranging from five fish per person up to ten fish per person, and bag limits ranging from a thirteen-inch minimum size, which is what is current, down to eleven inches minimum size, and, there, the current conditions were five fish per person and a thirteen-inch minimum size.

Here are some of the assumptions that go into this analysis. Trips that did not reach the bag limit, basically all the discards are assumed to be below the current size limit, because, if they weren't, then they would have been retained. Trips that did reach the bag limit, the current bag limit, obviously there was an assumption that some of the discards were below the current size and some of them were above the current size limit, meaning that they were discarded because the bag limit was reached.

The size limits that I was analyzing that are below the current size limits, all trips that have discards were both above and below the new size limit, and so, if I'm analyzing a size limit, the eleven-inch size limit and the thirteen inches, then all trips analyzed would have some discards that were above the size limit and below that size limit, and so the reaching the bag limit didn't have anything to do with -- That assumption, the first assumption, didn't apply to size limits below the current minimum size limit, if that makes sense.

What I needed to do was figure out what the size composition of the discards was, and, for this, I used the terminal year abundance at age and the discard selectivity at age for fish that were above and below each of the size limits, and the basic methodology was to calculate the proportion of the discards that were above the size limit, and the way that we did that was so that you have a twelve-inch size limit, and I was able to calculate the -- By using that, I was able to calculate discards, and, by calculating the proportion of the discards above each size limit, I can get the discards that were between twelve and thirteen inches, and that was the percentage of discards that were above twelve inches minus the percentage of discards above thirteen inches, and so that gives me the percentage of discards that were between twelve and thirteen inches, and I was able to also do that for the proportion of discards that were between eleven and twelve inches. That's just setting up for how I eventually ran the analysis.

Our current size limit is thirteen inches, and so, discards on trips that reach the bag limit at thirteen inches, I had to take those discards and multiply them by the percentage of the discards that were greater than thirteen inches. Please feel free to stop me at any point for questions, because I feel like, if I go too far and then you have questions, it might get more -- Your confusion may compound, and so at any point please feel free to stop me.

At the current size limit, I got the discards on trips that reached the bag limit and multiplied by the percentage of discards that were greater than thirteen inches, and that gave me the discards that were above the minimum size limit for those trips, the proportion of discards that can be used. For lower size limits, and so size limits below thirteen inches, at a twelve-inch minimum size, I get the proportion of discards between twelve and thirteen inches, and so I take the discards on all trips multiplied by that proportion of discards between twelve and thirteen inches, and then, the discards that are greater than thirteen inches, I take the discards on trips that reach the bag limit and multiply by the proportion of discards greater than thirteen inches, because only those trips that reach the bag limit at thirteen inches can have fish that are above the size limit. Does that make sense?

If you're looking at a size limit that's less than thirteen inches, then the assumption that they have to meet the bag limit to have legal-sized fish no longer holds. They can have twelve-inch fish on any trip, because the minimum size limit was thirteen inches, and so they could have discarded twelve-inch fish even if they didn't reach the bag limit on any trip.

DR. BUCKEL: I am trying to think of the last bullet, Mike, and, if folks catch their last legal fish, and so, everything that's been legal, they have kept, and, once they hit their bag limit of legal fish, they wouldn't have any discards that were above thirteen? I guess it's really just the way that people -- They might fish until they get their limit and then stop, and then does that mean that that last bullet would be overestimating the discards over thirteen, or am I missing something?

DR. ERRIGO: You are saying that the assumption that if you reach -- When you're analyzing the assumption that, for fish that are greater than thirteen inches, that, on trips that reach the bag limit, you would have discarded fish greater than thirteen inches?

DR. BUCKEL: Correct.

DR. ERRIGO: The assumption isn't that all your fish discarded are greater than thirteen. It's that only trips that reach the bag limit have the possibility of discarding fish greater than thirteen inches. Then, from that, I have to figure out the proportion. In the end, you will see, for black sea bass, that proportion of discards, that is actually really, really tiny.

It's not that all the fish discarded are greater than thirteen inches, but it's that only trips that reach the bag limit have the possibility of discarding a fish greater than thirteen inches. They may not have discarded any fish greater than thirteen inches, and so the proportion of the fish that are greater than thirteen inches is just the proportion across all trips, and you'll see it's much, much smaller than like one, which means that not all trips discarded fish greater than thirteen inches that reached the bag limit.

DR. BUCKEL: Thank you.

DR. ERRIGO: In order for all of this to work, I needed to figure out these discard selectivities, which are not anywhere, and I had to calculate them, and they had to be discard selectivities at age, and what I did was I followed along the methodology that was laid out in the assessments for how discard selectivity was calculated, and what's done is they used the von Bertalanffy length at age, and they assume a normal distribution, where the mean is the von Bertalanffy length, and then I would use the CV from the assessment around that length.

From that, at each age, I calculated a probability of being either above or below the size limit at age, at each of the ages, and then, given whatever species -- For black sea bass, the ages went to one through eleven-plus, and so eleven was the plus group, but, depending on the species, and this could be done for other species, the number of ages would vary.

Then there were certain assumptions made for black sea bass, and so, for black sea bass, there was an assumption made that there was full selection made at age-three, full discard selection at age-three, and then the estimated selectivity for -- They estimated selectivity for ages-zero to two, and so that was constant throughout.

I set the discard selectivity less than the lowest size limit for ages-zero to three at the update estimate, and so, for ages-zero through three, that didn't change. I just set it equal to whatever the update said they were, because those were held constant. They were estimated. They weren't calculated, and then, for all the ages-four and up, they are calculated based on this von Bertalanffy distribution methodology.

Then that's how we got the discard selectivity between twelve and thirteen inches, and that's how I was able to calculate discard selectivity greater than twelve and discard selectivity greater than thirteen inches at age, and then I subtracted the selectivity greater than twelve minus selectivity greater than thirteen to get the discard selectivity between twelve and thirteen inches. Here is how the calculation was done.

At the lowest size limit, these are the estimates from the assessment for ages-zero, one, and two, and then, of course, for minimum sizes greater than that, they are set to zero, and so, if you have full selectivity at age-three at a size of eleven inches, then you would have zero selectivity for sizes greater than that. That was the assumption made. Then this normal distribution with the von Bertalanffy as the size at age is the mean, and the CV is the median for fish less than eleven inches, and then this is fish greater than eleven inches minus fish greater than twelve inches for this selectivity and so on and so forth, at age, and so it was a different probability for each age.

This is complicated, but it's the crux of the entire analysis, and so, if anybody has questions of how this is done, then please ask. Once you get that figured out, then everything else kind of falls into place, but this is -- I basically just took the basic methodology from how discard selectivity is calculated in the assessment, in the BAM assessment. In the particular update, there were differences because of closed seasons, and this assumes no closed season, because, from 2013 on, there wasn't a closed season. It had been open year-round.

DR. LI: Just a very minor thing. When you assume the normal distribution, for example for the very small ages, like age-zero and age-one, when the normal may cover the negative side of the axis. In that case, how would you handle it?

DR. ERRIGO: For ages-zero through three, those weren't estimated using the normal distribution. Those were set in the assessment for this species at a certain selectivity that was estimated in the assessment, and I'm not -- They weren't calculated assuming a normal distribution. They were estimated, and the particulars I don't remember off the top of my head, and so they are constant in this analysis. They don't change.

DR. LI: I have seen people use gamma distribution to replace normal, because gamma is all positive values.

DR. ERRIGO: That could be a possibility for other species that don't have estimated selectivity for the smaller age classes. For black sea bass, this assumption was made in the assessment, and so I just carried it through, but that doesn't necessarily have to stay, because they assumed full selectivity at age-three and then -- I can't remember, off the top of my head, how the estimate was done from zero, and I don't remember if it was linear or if they actually estimated parameters. It says it in the assessment report, but I'm just not remembering now.

The next step, the next stage, is to calculate the discard proportion, what proportion of the discards is like above or below minimum sizes and things of that nature, and so the first step is to take the estimated terminal abundance at age from the assessment, and then what was done was multiplied by the discard selectivity at age for each of the different minimum sizes that we were looking at, and that gives the discards at age, the total discards at age.

In the report that I gave out, it shows the formulas for how calculations can be done to look at actual dead discards at age, but, since we're looking at proportions, a lot of the parameters that you would use to calculate out all of that fall out, because we're just looking at proportions, and so you really don't need to go through the full calculations. You just need to get the -- You just need to use these basic discard selectivities, because, once we divide by total discards, everything else drops out, and we get a proportion.

We do this for each of the size limits, and so, for black sea bass, the 2012 abundance at age, we had the discards less than eleven inches, discards between eleven and twelve inches, between twelve and thirteen inches, and then greater than thirteen inches. Then we sum all of those to get the total discards, and then, for each of those size bins, we divide by the total to get the proportion of discards for each of those size limits.

Then those proportions are used to calculate the number of discards that can be added to the landings per trip, and so, for the size limit, it's -- For the lower size limits, it's how many can be added for the lowest size limits or for the increased bag limits. I will go over how that's done, but this is how the calculations happen, and so you have your discard selectivities, and you multiply it by the estimated abundance at age, which gives you the discards and the total at the bottom, and then the total discards.

Then, when you divide the totals, these are the proportions in the yellow, in the highlighted, that we're interested in. The less than eleven inches is -- We're not looking at -- All those fish would be illegal under the size limit alternatives, and so we're not interested in that. These are the proportion of the discards that could be added back in. For this one, it would be if the bag limit was increased, and then this would be if we went down twelve inches, and you would add in these. If we went down to eleven inches, we would add in this proportion and this proportion together.

DR. DUMAS: I think what Mike is describing looks great. I think a probabilistic model is the way to go about this. There are two additional aspects that you might want to consider to add to the analysis at some point in the future. One is that changes in bag limits or size limits might affect effort, or trips, and there is some literature on this, and I can send the citations for that. The second point is that changes in bag or size limits can affect the value to the angler per fish landed. In other

words, it can affect the willingness to pay or the consumer surplus per fish landed, or even per trip, and there is some literature on that too, and so I will send those cites also. Thanks.

DR. ERRIGO: Thank you. I appreciate that, and, actually, those kinds of issues are also issues I think we have when we restrict the bag and size limits. We often tend to not take them into consideration, but I think they are very important. Whether you're loosening or restricting regulations, angler behavior most likely will change, affecting assumptions that are made, and thank you. I appreciate that.

In the end, you get these proportions. How this works is, if you're looking at an eleven-inch minimum size, and these are the proportion of fish between eleven and twelve inches that can be added back in, and this is the proportion of fish between twelve and thirteen inches, and so you would calculate those numbers of discards and add them together and add them all back in at an eleven-inch minimum size, is how that would work.

That is the entire analysis, and so that's the size limit, and so here is -- If the bag limit were to increase, this is the proportion of -- At thirteen inches, this is the proportion that would be added back in. If the bag limit increased at eleven inches, the bag limit would go up, and we would calculate how many discards can be added back in and add back in the discards either up until we have added in all the discards that were available or until the bag limits had been reached for the trips that had room in their catch.

DR. SERCHUK: I have a question, Mike. Have you thought about a way to validate the model? In other words, you have taken data either prior to or after, and it would be wonderful, because there are some assumptions -- There are still assumptions in here, and there are some caveats that people brought up about changing selectivities and so on and so forth, but I'm just wondering whether you could take the analysis back and use the terminal year before a size increase came in and then use all the assumptions you've had and then look at what actually happened, in terms of size composition in the catch or the discard rates after that or how many trips actually reached the bag limit, to give some assurance that the analysis actually is indicative of what we might expect.

DR. ERRIGO: I might be able to do it for the black sea bass bag limit now, because we actually increased the bag limit a couple of years ago. We have never decreased the size limit for an assessed species, that I know of, and so I can't test it on that yet, but we did increase the black sea bass bag limit a couple of years ago, and so I might be able to use it to look at that change.

DR. SERCHUK: What I would suggest is that you use the terminal year size just before it went in and with all the assumptions that you've had and then actually see whether the performance mimics what you forecast, and I feel more comfortable with that, because we don't expect -- I don't expect any model to be an exact portrayal of the truth, because, after all, it's just a model, but it would be helpful to see how far away or we would see how robust the modeling result is to actually what happened.

DR. ERRIGO: Yes, I would have loved to have done that. The problem is we've only increased size limits. For size limits, we have only increased them, and, actually, up until now, for bag limits, we have only decreased them, and so there is no time limit to go back and look at, okay, we decreased the size limit here and let me see, if I ran the analysis at this year right before we decreased it, how well it estimates, because we haven't done that yet, but, like I said, we did just

recently increase a bag limit, and so I might be able to run that analysis now that that just happened and see how well it does, in terms of this current data.

DR. SEDBERRY: Thanks, Mike. Before we get into any further discussion, I need to ask and see if there is any public comment on this. No public comment, and so -- Sorry. Please come on up to the table and introduce yourself.

DR. TRAVIS: I really appreciate Mike doing this analysis, and I don't want to steal his thunder. I know he's done a great deal of work on this, and so I guess I'm just trying to point out, in the Southeast Region, where we do the South Atlantic, the Gulf, and the Caribbean, we also do an alternative method, and I would call it a simpler method, where we just look at the intercept data and what are they getting at the dock and what's the size distribution, and so we've done a lot of work with decreasing the bag limit, and that's simple. You look at the size distribution, and it went from like six to four, and so therefore, as you drop that size limit, how will that impact the landings.

We do a lot of percent production, to make it simple for the council, and so, if you decrease the size limit, maybe it will decrease the landings by 10 percent or 20 percent, and we have also done a lot of increasing the size limits, where you -- You have the size distribution that the fishermen are catching, and, if you're going from ten to twelve, those ten-inch fish are now released, and so what impact will they have on the landings, and those account for roughly like 10 percent or 20 percent of landings, and this is all different for every fish, but I'm trying to through this kind of fast here.

Mike has pursued a different method looking at increasing the bag limit and decreasing the size limit, and so something we've done in the Gulf, for example for increasing the bag limit, is we've looked at -- I just recently did this for king mackerel in the Gulf, because keep in mind that a lot of these stocks have not been assessed, and so we don't really have a good sense of the distribution of the discards, especially when we're dealing with Caribbean fisheries.

Anyway, if you're trying to increase the bag limit, one way we've done it is by -- Say you're going from six to eight, and so those trips that did catch -- That met the bag limit at six fish will now -- We do like a high and a low, and so the high would be all those trips that met the six-fish limit now are going to meet the eight-fish bag limit, and so that's your high. Then the low is all those trips that met the six-fish bag limit, did they have at least two discards, and, if they did, then those trips would meet the eight-fish bag limit. Now, it's a big assumption, because you're assuming that those discarded fish were -- You don't know the size of them, right, and so you don't know if they weren't kept because they were undersized or were they discarded for other reasons, and so that's kind of like our low estimate, because, typically, you don't have a whole lot of fish with -- You have fewer trips with discards.

In decreasing the size limit, we've actually had -- We have stolen some data from FWC, and they a lot of times will have recreational observer data, but, anyway, I'm not trying to -- Mike did a much more complicated analysis, and so I appreciate that, but I guess that I'm just trying to say, in the Southeast Region, there is his method, and there is also some other methods, where we simply look at what is at the dock, the intercept data, as well as if we can get some observer data as well, and I will take any questions, if there are any.

DR. ERRIGO: Actually, I like -- The simpler the method can be, the better, and I think it should be used, and this method can only be used for assessed species. The reason why I pursued it for black sea bass and for other species that may be similar was because we were using a method -- It was for bag limits, and it wasn't for size limits at the time, and the reason why I added size limits was because of what the analysis for black sea bass showed, and so, originally, it was very similar.

The assumptions were, when you increased the bag limit, all trips that hit the bag limit would hit the new bag limit or, if they had any discards, then you would increase their catch up to however many discards they had. The problem was, when we looked at black sea bass, and as you've all seen with the discards compared to the landings, almost all trips had enormous amounts of discards, whether they hit the bag limit or not, and so there was a concern that a very large proportion of them were discarding undersized fish if so many trips were discarding black sea bass and not hitting -- Because very, very few trips were hitting the bag limit, but almost all trips were discarding black sea bass, and in large, large numbers, and so we were worried that most of them were discarding undersized black sea bass, and so I pursued something like this to see what proportion of those were undersized, and that's where this came from.

You're right that this is only for assessed species, and there are plenty of unassessed species where someone might want to increase a bag limit, in which case we couldn't use this at all. This is not useful at all, in which case we would have to revert back to a more simplistic methodology, like you described, but I think there are definitely cases where you would want to look further, like black sea bass, into the discards, to see -- If you're looking at a species where you didn't hit the bag limit and you had almost no discards, and, when you did hit the bag limit, you also had very few discards, then running a simpler analysis may be fine.

It's probably fine, but, in a case where you have lots and lots of discards, making that same assumption may not be very safe. That's what we figured for this, for black sea bass, and there are probably other species where that might be the case, in which case you would want to tease out which ones of those can we put back in and which ones can we not, and there are not -- I didn't have any observer data, and, for black sea bass, the vast majority are being caught north of Florida, which I don't know -- I think the only observer data was coming from the headboats, which are actually a small portion of the catch for black sea bass recreationally.

That is just an explanation of why this complex -- I am not a fan of complicated analyses, to be honest with you, but that's why this happened, but I agree that the simpler methods, if you can get away with them, are the way to go.

DR. SEDBERRY: Thanks, Mike. Before we open it up for general discussion, I wanted to give the chair of the workgroup, Marcel, an opportunity to comment.

DR. REICHERT: I don't have a presentation. I think the report -- We had a webinar in July, on July 3, with the working group, and I think the report is short and sweet, and I want to highlight a couple of things. Mike did not include any uncertainty analyses, and we talked about that, and he said that would be available.

Also, one of the things that we noticed, or that Mike explained, was that the headboat data was not included, and he was going to include that, and the bottom line was that the working group agreed that the presented method is appropriate and considered best scientific information available, and

we deemed it appropriate for short-term management advice, and so, with that, I'm going to hand it back to you, George.

DR. SEDBERRY: Thank you, Marcel. Our action items for this agenda item are discuss the uncertainties associated with the analysis and then determine whether this analysis is BSIA, which the working group did determine it was both.

DR. ERRIGO: Marcel, I didn't realize that's what you were asking me about the other day, and so, yes, the uncertainty analysis was finally completed, and I believe that's included in the -- I don't know if I included it in the report here, but it's included in the material now available to the working group, and the headboat data is included in this analysis, but I couldn't show it to the -- I couldn't show all of the steps to the workgroup, nor could I to the SSC, because it involves trip-level information, which is confidential.

DR. REICHERT: Sorry, and I failed to mention that, but that's actually in the -- That's in the report, in the working group report, and so thanks for that.

DR. BELCHER: Just to continue on with Marcel's thing too, unless it's been re-run, this is all on the old MRIP numbers as well.

DR. ERRIGO: Yes, and this is not -- Right. I wasn't going to use any of the new MRIP data until everything had been incorporated into a revised assessment, where I had updated abundance estimates, because that all has to go together, and so, yes, this is all old MRIP data, although I am using trip-level data, and so that wouldn't actually change, but it's when I -- If I were to expand it up, that's where it would change.

DR. BUCKEL: Just following up on Fred's suggestion of validation, you mentioned that there is no other species in the Southeast where the size limit has been decreased, but there is other species in other systems where that has occurred, and so maybe that could be used as a validation. Similarly, there is the trip-level approach, if there's another species where that was done, and you could compare this to the trip-level approach that was mentioned, and it would be nice to see that validation. Then I had a question to these proportions that are in yellow. Those are multiplied by MRIP B2, and is that -- To get the landings that you would add to --

DR. ERRIGO: Yes, they're multiplied by the MRIP B2 at the trip level, and then that is added back into each trip, and so this is the proportion across the board, and then every trip that had B2 is multiplied by -- For the greater than thirteen inches, it's just the trips that hit the bag limit, and you multiply those B2, and then, for everything else, it's the B2 for every trip, which is why the proportions are so tiny, because not every trip discarded legal-sized fish.

DR. BUCKEL: One of the things that -- We have tagged a bunch of fish, and one thing that you find out is the fish are caught multiple times, and so there is these repetitive captures, and so, when you look at the MRIP B2 and you see -- We were looking at the updated numbers yesterday, and it's like ten-million black sea bass, and you don't want to look at that and say that's how many fish were -- Those aren't independent fish that were discarded, because some of those are caught -- There might be an individual in there that was caught five times, and so it's not ten-million independent fish, and maybe it's five-million independent fish that are caught twice. I am trying

to wrap my brain around how that would impact this, using those B2, if that may not be independent, and adding that back into the landings, if that's an issue or not.

DR. ERRIGO: If I had a correction factor at the trip level, I can correct all the B2 and then apply that, and so this is in the assessment, and so these proportions wouldn't be where the correction would be applied. It would be applied to the B2. If I had a correction factor for the B2, I can correct those and then apply the proportions, which is fine. That would change the number of fish that could possibly be added back in.

This small of a proportion, in this particular analysis, it probably wouldn't make much of a difference, but, yes, the -- Now, if that would make a difference in the assessment, then they should be corrected for there, and then these numbers would be different, but then I couldn't correct for them in the analysis, and they would have to be corrected for in the assessment. Because they weren't corrected for in the assessment, then I think I'm working apples-and-apples here, because the assessment took the B2 as-is, and so I'm taking the B2 as-is, but, yes, if B2 means -- If a trip says that they discarded fifteen black sea bass, but, really, that's five black sea bass being discarded three times each, that's a difference that would -- If you corrected for it, it would change things, but I don't correct for that. It can be corrected for if we had data to create a correction factor, yes.

DR. BUCKEL: Great. I think even more reason for some validation to be done with some real data, and so, great. Thanks.

DR. REICHERT: Jeff, you have done some work on it, and do you know if we have any estimates of repeat catching from like MARFIN recapture studies and stuff like that?

DR. BUCKEL: We have that, and that's how we discovered that this -- We started thinking about this population of B2, and it's difficult. When we catch the fish and tag it, you don't know if that's the first time or the third time, and so we haven't -- That correction that Mike is talking about, we haven't made an attempt or thought that through of how to calculate it. We have been approaching it more of if the survival changes from the second and third recapture or how that might impact the number of dead discards, but we haven't approached it from the correction factor that Mike is talking about.

DR. REICHERT: That is exactly it, because, the more you catch a fish, then your discard mortality -- That is not constant anymore, and it may actually go up.

DR. LI: I have one question and two comments. The question is, for this analysis, you changed the bag limit and the size limit at the same time, or we could have only changed the bag limit and kept the same size limit and -- I mean, the same bag limit and different size and same size limit and different bag limit.

DR. ERRIGO: How the analysis is run is, for each size limit, I analyzed all of the bag limit, and so changed the size limit. I did all the bag limits at thirteen inches and all the bag limits at twelve inches and all the bag limits at eleven inches.

DR. LI: Because I am wondering like -- Here, the table only shows the size limit, like the proportion when you change the size limit. Even though you lump all the results across the bag limit under each size limit, across the -- I would like to see a table for when you change each bag

limit and size limit, or maybe even for each single scenario it's a combination, and we can see that maybe that you don't need to change it that much and you can get the same effect.

DR. ERRIGO: This presentation here is only showing the methods for getting the tools necessary to do the actual nitty-gritty analysis. It doesn't show the entire analysis, and the analysis and the results are in a giant spreadsheet, which I guess I didn't include in the briefing book? Yes, I did. It's in the spreadsheet.

How it works is these proportions are used to look at what discards would be added back in, and then, depending on which alternative I'm looking at, that tells me how many of each of the discards to add back in, and that gives me the analysis for each of the bag and size limit combinations, and so that's how we're -- So, if I'm looking at an eleven-inch minimum size at a seven-fish bag limit, I would take this proportion of these fish, and so I would multiply the B2 trips by this proportion and get those number of discards and then multiply the B2 of all the trips by this proportion to get these discards.

Then, all the trips that hit the bag limit are multiplied by this proportion to get those B2, and that gives me the pool of discarded fish that can be added back in, and I would add them back into each trip until I either used up all my B2 for that trip or I reached the eleven-inch, six-fish per person bag limit, and I would do that for every trip. That would give me the analysis, and that would tell me what the catch would be if all trips had that regulation, rather than current, and I did that for all of the alternatives that I was looking at. The spreadsheet has a large matrix in it that does all the calculations, and then it has a results tab that has all the bag and size limits together and then graphs of how the catch changed.

DR. LI: Do you see like any combination that is most effective?

DR. ERRIGO: Because the great majority -- As you see here, the great majority of discards, over 98 percent, is less than eleven inches, and the effects are minimal of any of these bag and size limit combinations, and so you see increases. As the size limit goes down and the bag limit goes up, you see small increases, and that's it, but there is nothing that makes an enormous impact. The size limits make a larger impact than the bag limits, is the only thing I can say, but the impact --

DR. LI: I am thinking in terms of management, and I had a feeling like, if you change one regulation at a time, it may be easier than changing two regulations at a time, sometimes, depending on what regulations.

DR. ERRIGO: It's certainly easier, but that's not always how it happens, which is why I'm trying to develop -- Why is why I had to develop analyses like these. We're finding more and more that management is looking at more complex regulations, where multiple things are changing at once, and so this is one of the analyses that we're developing to try in like things together as a package, rather than analyzing things separately, because we know that they have compounding effects.

DR. LI: Thank you. My two comments, one is back to Erik's comments earlier, because this is what we are hoping our analysis shows and how the fishermen behavior responds to the change and, if they will do what we are hoping for, that's another story, which means -- It doesn't mean that it necessarily will come out like this. We don't know, and another thing is this is -- When we look at this, it's to try to figure out how much discards we can move back to landings to reduce

the waste, because, when you decrease the size limit, you are catching -- You may catch more smaller fish, and how that affects the population itself, and so I'm thinking, in the validation or something, we have to address this, if this eventually will go to management, and then we have to address it in three different perspectives, and one is the benefit to reduce waste itself, and then there is how it affects the population itself, and then the other one is how the fishermen behavior will follow what we are hoping for, and that's another story.

DR. ERRIGO: The issue about fishermen behavior changing has always been a difficult one to address in all of our analyses, whether they are going in this direction, loosening regulations, or tightening. A lot of times, what we're doing is we're doing an analysis for what will happen next year based on let's say looking at the previous three years of data, and so we're looking at 2015, 2016, and 2017 data, and we're trying to predict what's going to happen in 2018, in the 2018 kind of thing, or 2019, at this point.

We have no idea if behavior from those three years will have anything to do with behavior in 2019, and that's the same problem here. Actually, I'm using data from 2012, 2013, and 2014, and this analysis was supposed to, at the time, be looking at 2015. Yes, I think it was 2015, or maybe even 2016. I was doing it in 2015 for 2016, and so that's another confounding problem, is that I'm using data and behavior from these two years to try to predict behavior one or two years later, and so that's an issue that all of our analyses have, including this one, and we caveat it, but it's a big assumption.

DR. LI: I agree that that's something -- How to predict, I am thinking like you have a survey or something, and add one question to your survey and ask, if we make this change, would you still go out as usual, or would you hesitate to go out and save some time or money or -- Develop or like add one or two questions in your survey, and maybe you can get an idea if they will behave as we would predict, just as some confidence when you proceed to the management.

DR. CROSSON: Those are pretty standard on contingent valuations. That is, would you choose either of these options or would you go do something else?

DR. SEDBERRY: Mike, it occurred to me, as I was watching Chip type these notes, that, back in the 1990s, early to mid-1990s, the MARMAP program did a really intensive tagging study of black sea bass at Gray's Reef National Marine Sanctuary to look at movements and to estimate population size, and I can remember that several of those fish were caught two or three or four or five times, and those data are still around somewhere, and so you might be able to get that correction factor from that study.

DR. ERRIGO: I suspect, if we can calculate a correction factor for that, that it could be discussed at the next SEDAR assessment, and, if they find a way to correct for that in the SEDAR, I would use the exact same correction here, and, this way, everything will be lined up quite nicely, or I could just correct for it, but, if I correct for in the B2, but the B2 went in as-is in the assessment, I'm not sure how these proportions then will relate to the data that I am using, and I don't know how that --

DR. REICHERT: I can imagine there will be a strong relationship between density of black sea bass and the recapture rate, and so I think we need to look at that and be a little careful in terms of using some of those estimates. I mean, I need to think about that a little bit.

DR. BUCKEL: That's one of the things that we were concerned about, was how these repetitive captures are in the B2, and then those B2 are multiplied by the discard mortality. It turns out that, as long as the discard mortality on that first, second, third interaction is the same, the number of dead discards isn't biased, and so the B2 is not being independent, but it's just that how many times they were caught, and you have this many B2 multiplied by the discard mortality, and that's how it's done in SEDAR, and that estimate of dead discards is not impacted by them not being independent.

DR. SEDBERRY: Any additional questions or comments to address the uncertainties or the best scientific information?

DR. TRAVIS: I just wanted to point out that a lot of these questions asked about validation, and we looked at that in the Gulf, and validation is really difficult. For example, you change a size limit, and so one thing you need to look at is, as the size distribution changes, are they following the law, and that's great, but the problem is -- Let's say in 2012 we estimate that a size limit change will reduce the landings by 10 percent, but then you need to have a good predication of what the landings would be in 2013.

You need to have a really stable prediction of landings, and then you can say, oh, it actually did reduce it by 10 percent, and, unfortunately, the stocks that we changed the size limit and the bag limit are not the same stocks that have very stable landings. We are changing the size limit and the bag limit because something is wrong. Either it's overfished or they're going way above their ACL or OFL, or they're experiencing overfishing, and we have looked at, for example, gray triggerfish in the Gulf, and the real killer there is effort, but that's a unique fishery which is creeping towards a derby fishery, and so we looked at, okay, we estimate the size limit will decrease the landings by 20 percent, but then they just end up fishing more and more and more trips, and so I guess what I'm saying is validation is something we're still working on, and it's a very difficult way to validate. You validate it with a size distribution or the intercepts and are they actually following the law, but the impact of it on the landings when effort is changing is certainly messy enough, and so I'm just giving you my two-cents there.

DR. SEDBERRY: Any further discussion? Okay. Thanks, Mike and Marcel, and I believe we can move on to Item 11. No?

DR. REICHERT: We need to address the action items.

DR. SEDBERRY: I'm sorry. So the BSIA, is it the best scientific information available, and is it appropriate for use in managing fishery resources? The working group has agreed that it was both, but we need a consensus from the SSC on that. Is there anybody on the committee that disagrees that this is not best scientific information available and useful for management? Okay. Chip, can you scroll back up to the top and make sure that we have -- I know we talked about several uncertainties, but there may be some additional ones.

DR. BELCHER: I guess my question is just are -- Some of the comments and concerns that have been brought up is that precluding -- Do we still have things that we need to see done before we can actually say -- I mean, I think it's a good starting point, but, if we still have issues that we need to build in, and, like I said, I think it's a sound approach, and I don't dispel it, but I think there are

still questions around, like Fred said, of are there ways to validate it or are there things that we need to consider, the fact that we still haven't applied it with a current set of data. I mean, I don't -- That is my only question, is with the BSIA. I think, as far as the approach itself, it's sound. Do we think we should develop it further? Yes, but is it complete?

DR. SEDBERRY: So some of these other things, like the correction factor we talked about, might be incorporated.

DR. SERCHUK: Of course, if we had full knowledge, we could develop the right correction factors, but my feeling is this is going to be -- Depending on the behavior of the species, and some are very territorial, and so they don't really move, and so you could go to the same spot and catch the same fish over and over again. Others are not, and I wonder -- In theory, of course you could correct for them, but I'm just wondering how you would bring experimental data on a correction factor to a fishery which may be widespread over a number of areas, and, again, I am not trying to throw darts, but I'm just wondering how valid a correction factor would be, even from tagging experiments, to a fishery for a species. Is it because the behavior of the species is such that, if we go in one area at this density and we find out that you're liable to catch the same fish three or four times, that that is an appropriate correction factor?

I am not really quite sure how you would do it, but I don't dismiss the fact that, if you had an appropriate correction factor that took into account the behavior of the fleet and its fishing practices and the behavior of the fish relative to a susceptibility to be caught many times, you could do it, but I'm a little bit perplexed how you could take experimental data and apply it to a fishery that operates over a larger area, and it's my ignorance, but I'm just asking for some input on that.

DR. SHAROV: Real quick, there is a number of assumptions that were spelled out here, and there is a number of assumptions that have been made but not spelled out, and so this will work as long as the assumptions hold, and we know, for sure, that, in practice, it will be messy, because of so many other things that will get in the way, such as, for example, multiple recaptures as well as like changes in growth rates or random movements of certain size of fish, et cetera, and changes in human behavior, et cetera, we are not going to be -- These are all uncertainty factors that we know, and we assume that, and, for that reason, I think this should stand as the BSIA, given the assumptions that were made in the analysis. If those are violated, then the results will deviate, and we expect that they might deviate, but there is no other way of going forward.

DR. ERRIGO: If this helps, I presented this with black sea bass data, and that was meant as an example of how this works. The hope is to review the method itself and if the method is sound. There are going to be issues species-by-species, and, when this analysis is used on a species-by-species basis, that analysis in the amendment will come to you for review, and then, if there is a particular issue with a particular species that we may be able to handle, that can be incorporated into the analysis.

The hope here is to take a look at the methodology in general and say does this methodology in general -- Is that good enough that we can perform the analysis on a regular basis, and then, once that's done, bring the results to you and then, like for black sea bass, say but we have a correction factor for this and we think you need to apply that before you have these results, and then that can be done, or, for red grouper, there is this issue, which you haven't taken into consideration, but we think you should, or there is this issue which will add uncertainty, and we think you should

specifically say that this is a large area of uncertainty, which you haven't explicitly said, or things like that.

I know it can be hard to break those apart, but I'm hoping that we can -- That will lead to our review of the tool and the particular data separately, because we haven't used -- This analysis is not -- There is no amendment, and it has not been used to analyze this data. I'm just using it as an example because I had it. I had all the headboat data and everything.

DR. SEDBERRY: Thanks, Mike.

DR. REICHERT: I think, also, that's why, if I remember correctly, the working group agreed that we used the method and we didn't use the analysis, because the analysis may change if uncertainties or other things, like the changed MRIP numbers, are included, and so I think, as a working group, we were aware of that, and so I just wanted -- Maybe the language here could reflect that, and that may clarify what we actually consider the best scientific information available. It's the approach and the current method, because we realized we actually, in the report, were -- We discussed with you some additional analysis, and I'm not sure if that does, but that may help the committee.

DR. SEDBERRY: The report is worded that the working group agrees that the presented method is appropriate and considered the best scientific information available. Given the assumptions and the unknown behaviors, we can agree that this is BSIA? I see heads nodding and none shaking.

DR. DUMAS: I think this is a great start on sort of the bag and size limit analysis per trip. My understanding is this is sort of looking at the effect of bag and size limit changes on landings per trip, and I think this is great for that, but I do think that, in addition to this, we ought to look at how changes in the bag and size limits might affect effort, or the number of trips, and I think that's going to be very important too in getting at the ultimate effect of these changes in bag and size limits on landings, but, as far as how changes would affect landings per trip, I think this is a great start. Thanks.

DR. SEDBERRY: Thank you.

DR. ERRIGO: I don't look at how it affects effort, and I'm not sure how I would go about doing that now, although you did make suggestions of how I might be able to do that, but it does expand the trip level catches up to the actual total landings, and the analysis is done at the trip level to look at how the catch of each trip changes, and then the expansion factors are used to expand that up to the actual estimated landings, and so the end analysis will show how the new estimated landings are changing from the original estimated landings. That's just in case everyone didn't have time to read through all the lots of pages and tabs of the analysis that was included in there, but it doesn't look at changes in effort. That's true.

DR. SEDBERRY: Okay. Any additional comments on this?

DR. BUCKEL: Unless Mike wants to continue working on this, there's been a lot of different suggestions thrown out there, and I'm sure Mike can tackle it, but it may be something that we want to list as a research recommendation. I know you guys compile those, and that would be a recommendation from me, is to get it on the research recommendations, so it could show up on

some NOAA RFPs that folks could tackle this, the validation part and the effort and some of the fisher behavior.

DR. SEDBERRY: Very good suggestion. Okay, and so I think we thank the members of the working group, who were Marcel, myself, Carolyn, Rob, Eric, Scott, and Laura Lee, and, of course, Mike for the data analysis and presentation. I think we're moving on now to the next item, Number 11, the Ecosystem Model Update, but, before we do that, I would like to take a break, so that those who need to check out can check out, and I think we need to get Tom Okey online, to make sure he's available for his presentation, and so we'll take a break here and come back at ten o'clock.

(Whereupon, a recess was taken.)

DR. SEDBERRY: Please make your way back to the table. Our next agenda item is Number 11, the South Atlantic Ecosystem Model Update, and I have Chris, Anne, Marcel, and Tracy to be responsible for note-taking to supplement Mike's notes for this. There is two attachments, 24 and 25, and the presentation will be by Tom Okey at the University of Victoria British Columbia via webinar, and so I think Roger is going to take the lead on this and introduce Tom, and is that correct?

SOUTH ATLANTIC MODEL UPDATE

MR. PUGLIESE: Yes, and this is going to be a little bit of a team effort. We have Tom Okey online that will be providing the update and a focused discussion on advancing coordination with the SSC on the development of the Ecopath model. We also have the opportunity to have Howard Townsend, the head modeler/ecosystem coordinator for NOAA Fisheries nationally, attending, and he has also served as part of the workgroup that has fostered and advanced this modeling effort, and hopefully we can see it go into the future. We're all going to be here to be able to -- Tom will do the presentation, and he'll be able to answer questions and advance perceptions on where we are and the coordination efforts that have got us to this point.

DR. SEDBERRY: Thanks, Roger, and I think, also, in addition to the attachments that were distributed with the briefing book, there was an emailed attachment this morning, and is that right, a new --

MR. PUGLIESE: Actually, it went to you, and I think we'll distribute that later. What Tom has done is done a more consolidated version. We sat down and kind of hammered it out, so it became a little bit more concise and got to the meat of the discussion about advancing this to a workgroup or a sub-committee or whatever the SSC -- How do we take these to the next steps to finalize the model with considerations like the new MRIP issues that have to be addressed, and how do we move forward, and Howard really providing the context too about perspectives on -- With his experience with taking it from product to management, and I think this is going to set the stage for those discussions with the group. That can be provided, and it's a more consolidated version and focused on this.

DR. TOWNSEND: We'll get Tom rolling here, and then we'll hopefully have a good discussion after that. Tom, take it away.

DR. OKEY: Thank you. Tom Okey from Victoria, British Columbia. As Roger and Howard were saying, it's a team effort this morning, and we think that's the most useful thing to do to lead into this discussion about what this sub-title is on this slide of forming an SSC workgroup to facilitate engagement or whatever is the way forward, as Roger was saying.

We're just going to -- Obviously, I think most of you remember a couple of presentations about this Ecopath model, or the fishery ecosystem model for the South Atlantic region. The Ecopath with Ecosim and Ecospace suite is a fishery ecosystem model, and so it emphasizes fisheries, and we really try to account for all the flows, the biomass flows, in the system, including the fisheries, but also the -- This is just showing the components, really, of the overall approach of Ecopath, Ecosim, and Ecospace. Ecopath is the static description of flows in the system, and then the Ecosim part is dynamic, a temporal dynamic, simulation.

Essentially, we wanted to buzz through these initial slides, because we didn't want it to be too much of a technical review, and so that we can get to the conversation that we want to have, and so, essentially, the reason we put this together was so that the South Atlantic Council and the whole region would have the capacity to ask these indirect ecosystem questions and direct effect questions and look at trophic cascades and try to understand impacts, climate change impacts, and other kind of environmental change impacts as well as implications for fisheries and try to get a whole ecosystem view of fishery interactions and changes that we're seeing in the environment.

Essentially, this South Atlantic Bight model has a history that started back in really 1999 or 2000, and with this strawman 48-box model constructed initially, and then there was a second iteration in 2004, or a little bit before that, but we put together a pretty active collaboration of partners and collaborators from the region to really refine this model to a 98 functional group model at that time.

Then, in 2014, it was refined again, because folks were interested in forage fish questions, and so there was a little bit of reorganizing of the functional groups that we had there, and now this iteration, which you may remember, is to break out all the managed species that that information exists on for the South Atlantic region, and so that's what we have done with this model. We are pretty excited about how useful it might be to asking questions for the council, single-species considerations and interests and also then broader questions related to that.

This is just showing the first publication describing that first iteration of the model, and that's our Fisheries Center research report, and these were just the primary contributors early on, like in the early 2000s, where we did that first refinement of the model and made it broader, and so this is the first group that we had, and you probably recognize a lot of the names there. Then a whole bunch of other people who really contributed information to help us refine that iteration, and, again, this is very early on, and so I'm sure you recognize a lot of those names.

This was the working paper that came out of -- This is a report that came out of the 2014 iteration. Pew Charitable Trusts were interested in the forage fish issue, and so we basically broke out those forage fish groups, illustrating sort of the flexibility and responsiveness of what you can do with these models, and so, if you're interested in a particular sub-web or particular kinds of dynamics, you can modify the model so that it is more capable of addressing or approaching your questions, and so that's the way we're thinking of this next, latest iteration, is that we want to start very broad,

and these are just some of those forage fish groups that were broken out, and those are the predatory groups.

Anyway, we ended up with these ninety-nine functional groups, or actually 137, and now 142 functional groups. We don't need to get deep into it, but those are just some of the pictures of the overall -- The point of showing those big webs is just to show that there is lots of connections, but we wanted to start broad, and this is saying a 137-box model, but it's now 142. These were just added managed species to the latest model.

That was basically all the groups in the model, and so this is our working group so far in this preparatory iteration that we've done, and I say "preparatory" because, essentially, now we want to -- We're starting to do the final refinements and then start using the model for the questions that people have in the region, and that's why we're sort of approaching you with this question about how -- If we put together a working group or whatever other approach to move the model forward to start addressing some of the issues, and these are just all of the folks in our working group so far, but, of course, we're going to be suggesting that a working group is formed, and some of these folks would be involved, and then maybe others brought in. I know Rob Ahrens is not there with you, and obviously Rob is quite knowledgeable about this particular approach, but I am assuming he would be interested in such a working group, but I would have to ask him, I guess.

This is just taken out of the briefing materials that you have, although I have added this one line of the possibilities of regional students and staff, and then Howard and Roger and I had some conversation about how to move this forward, and we're just thinking of ourselves, perhaps, as the coaches, and perhaps a quarterback is needed in the region, because, with these ecosystem models, obviously they are quite -- They are simplified versions of ecosystems, but they're quite complex, in terms of the number of functional groups in them and the diet compositions and all the fisheries information and everything, and so, really, it requires, I think, like someone's undivided attention, or 100 percent time, on it, and that's a little bit debatable, because, at least initially, it requires 100 percent attention to get it really up to speed and running.

The question is how would that be put together and who could the person be for that region, really? The tasks are the development of the next generation of Ecopath with Ecosim model is nearing completion, and so this process -- Essentially, the workgroup would be asked to view the data that we have used and the way we've structured the model, and then the decision would be made of how we put together the model and structure it and then also guiding the questions in the various analyses.

This is just a summary of the updated data underlying the model. The data from your region, obviously, you know are amazing, and this model will be really the Ecopath model, the premier Ecopath model, in the whole world, with the best data, I think, and especially after these -- In terms of the diet data that Tracy and Kevin and Marcel have provided, those are amazing, and there is great abundance data and trawl survey data, and many of these are as time series, and the South Atlantic landings, time series from 1995 from -- That is really great and fantastic information for this, so that we can fit the model to a time series and try to make fits capable of giving us projections with some confidence.

Then information on landings trends for the managed species, more specific information, and we have biomass of the catch and the South Atlantic assessments and headboat recreational landings.

All of these give us the capacity for this to be really useful, in my opinion, and obviously there are issues now, updated issues, with the recreational program, in terms of the changes in the species that really may affect the balance of the model that --

The first phase that we've done here is providing a snapshot of the ecosystem that -- Doing predators and prey and so looking at the whole system, and so Ecosim is -- We are capable, and we are underway with doing that, but we have to, as I said, refine a couple of those models with information that has been revealed that we now need to update, and this is the general kind of issue that we will always be looking at and that will always confront the model, and so, as new issues come up for the council and the region, there may be a need to adjust the model and update the data, but that is part of why we went broad with the model and articulated, highly articulated, that, because we want to include all those potential sub-groups, so that the model could be oftentimes useful right off the shelf, and so that's where we want to bring the model to, and we want -- The way to make it useful is for, again, somebody to be the custodian or the quarterback for that model.

Our next step is we want to finalize Ecospace, as I was just saying, to make it sort of immediately capable of addressing questions, so that there is not development time -- Not necessarily development time prior to the questions that we would want to ask, and it's to complement whatever single-species models or other work that -- This workgroup would provide guidance on these web scenarios and questions that you would want to ask and then potentially development of sub-models. Obviously there are models that can kind of be folded out of this overall broader model, especially questions having to do with estuaries or kind of smaller areas, where the dynamics might be -- It's question dependent on this, and so --

Then the guidance and the level of -- I already mentioned this need for a model quarterback, and the working group can figure out, at least based on your regional expertise and knowledge, how to fill that role.

MR. PUGLIESE: Tom, you are fading in and out a little bit as you're going through, and it's getting lighter and lighter.

DR. OKEY: Sorry about that, everybody. I think I'm having microphone problems, and so that last point is the working group, based on their knowledge, their local knowledge, can then help also figure out who this quarterback would be and how to fill that role and where that person would be and where they would be coming from and how to structure the overall project and moving forward, in terms of guidance from myself and from Roger and Howard and Rob and others.

Just some little next steps is that we have to do these MRIP updates to the model and other refinements relating to the diet composition, and then this cross-walking of just the capacities, and I'm taking that language from Roger, and it's essentially trying to -- There is some capacity in the region, I understand, that relates very much to this modeling effort and seeing how those capacities can relate to contributing to the model and then giving it some continuity as we move forward.

I don't know how much time we have left, and I think it was supposed to be about ten minutes, but, for example, and these are just examples. We could simulate the use of MSY for all managed species, this simultaneous MSY goal, to explore the broad ecosystem effects, and that's just a broad, really interesting question, because obviously there is limited production, and there is limited biomass and production rates in the overall system, and so you maximize MSY for all

species then, and we would see whether is really a -- Then, obviously, specific questions to begin investigating this red snapper and black sea bass interaction.

This goes into that ecosystem cascade linked to red snapper and black sea bass, because this is one of those situations where a model that can be built from the cascades can be very useful in even just understanding the general dynamics, and so, if this red snapper population has really grown a lot in certain areas in the south and the black sea bass have moved down there and then are also becoming more abundant, or they're eating too much of the red snapper -- I'm sorry. The red snapper population is eating too much of the prey, and how is it affecting numbers of red snapper, et cetera, all these questions, and so those can all be addressed by these food web trophic dynamic fishery ecosystem models.

Then, obviously, there are spatial components to that question as well, and so, after the temporal situations are explored, we can put together a spatial analyses to see how introducing space really affects those temporal dynamics, and then, in my experience, and in the experience of a lot of people, we really do learn a lot from these kind of analyses, even if that learning is more hypothesis that you wouldn't have been able to gain insight into without dynamic models. I think Roger and Howard might have some additions to say to that.

MR. PUGLIESE: Just some real quick comments. I think I want to thank you, Tom, for kind of bringing it down to where we are now at this stage in its development, and I think the main thing that I wanted to do is thank all the individuals involved that have contributed to this point, because I think it's been really critical to do things such as make sure that we had the most recent assessment information for all managed species integrated, so that it compares to some of the activities that NOAA Fisheries is involved in, biomass and some of the surplus modeling they're trying to do, so that we have some comparability between these different efforts, and it uses the most recent information for all those species.

The other aspects are that where we are now also has had the opportunity to be drawing on a lot of the iterations identified in the past, and so the collaboration over time has been really useful to -- It's very focused efforts in some of the other modeling work, and it provided more detailed components so that will be able to be integrated into this effort, or at least guide how it evolves beyond this point.

One of the last points I was going to make is that, as this evolves further, we're going to reach out further into getting some of the spatial capabilities, and that's really going to take going even beyond where we are right now, in collaboration with the Ecopath consortium, to an international group to be able to guide some of the newest capabilities on spatial activities.

The point I was going to make about where we are with bringing this forward to the SSC is I think, right now, the context on creating a workgroup was how we wanted to frame it. One aspect I think I had discussed some with Marcel and others and Howard, and Tom too, on this is we have, as you saw early on, the workgroup that was essentially between the council and the Landscape Conservation Cooperative, who funded this effort, is extensive, bringing in either modelers that have been working on existing other aspects of ecosystem models, such as Luke McCracken in the Florida Keys, and modeling of it to actual productive management strategy evaluation work to people like Ruoying He, who is going to be integrating and is already queued up as we get to the

next stage of this to integrate the environmental components of the models that they're doing extensively.

I think the idea of being able to work between a sub-group of the SSC, whether it be a standing committee, potentially, and then that other modeling workgroup, because, if at all possible, I think the expertise of that group is something we can't replace, because of the breadth. It has everything from the international connection of the consortium to Howard is directly involved, and so we've got a link back up the chain, in terms of to the directives from on-high, and then all of our collaborators with the fishery-independent survey activities and the ongoing work with the SSC, with Marcel and Luiz, et cetera, and so I think that's something that, in the discussion, you all can consider on where you want to go.

The intent here is to take these to the next steps and advance this and keep the momentum moving, because I think you can hear from Tom, and he's been working on a lot of these models throughout the world, but this is one of the most -- It's the opportunity to really be one of the most comprehensive and be able to really work into the system and address some of the longer-term capabilities for understanding ecosystem dynamics in our region, and that's all I wanted to say, and I will let you all go.

DR. SEDBERRY: Thanks. Before we begin any discussion, we need to take public comment, and so let's just take a quick minute here to see if we have any public comment on the presentation that Tom gave. Rusty Hudson. Please come up to the table.

MR. HUDSON: Thank you very much, Mr. Chairman. Rusty Hudson, Director of Sustainable Fisheries, and also here to represent East Coast Fisheries Section. When I had just seen that slide, one of the last ones, and it talked about red snapper and black sea bass being prey, I want you to understand that juvenile black sea bass, very small. Once you start getting up around the minimum sizes, it doesn't become an issue anymore. Thank you.

DR. SEDBERRY: Thank you, Rusty. Now we can -- Go ahead, Howard.

DR. TOWNSEND: I just wanted to offer a little more recap there, because Tom was cutting out a little bit, but just sort of to help organize the discussion. First off, I want to reiterate the phenomenal effort that went into pulling together the data for these sorts of things, and especially a highly-articulated model like this, but you saw the list of the data sources, and that, in and of itself, is a valuable tool for the council and the SSC to have and to tap into, and so to have a working group that helps maintain that and sort of --

As we call it, a quarterback who keeps the ball running on that, I think that's an important point to keep in mind, and so now, with the final sort of revisions, and hopefully under the guidance of this working group that we're proposing, to the Ecopath model, and then you have a mass-balanced dynamic snapshot of the system, and so you can begin to do analyses of like looking at keystone species and what are the keystone species that may be important ecosystem components that we don't manage, but we need to keep an eye on, and so that's another just first stage useful approach to using a really broad model like this.

Then the time series, as I understand it, are all sort of lined up, so that, once you have the mass balance with the new updates from MRIP, and you can do some simulations and sort of fit the

model to those time series, so everybody is comfortable that you have reasonably captured the dynamics in the system, you can then begin to look at these what-if scenarios, like Tom has suggested, of what if we did fish everything at MSY and what really would happen in the system? Can we even do that?

It's broad questions, and so that requires a certain level of review. These aren't binding, and so it's maybe not as intense of a review as you would have for a stock assessment or something, but a general review that you have used the best available data and that you have been fair in the estimates that you've put in, as far as interactions, i.e. consumption, diet composition and those sorts of things, and so that's another thing that would be important for this working group to weigh-in on.

Then to really start deciding what are some of the big questions, because I'm sure the council gets questions from stakeholders and different groups on a fairly regular basis of what if this happens, what if that happens, and just to have a big, articulated model like this to do a first-cut look at it is a useful thing, and then, as I was alluding to earlier, having all those data sources together, having the data put together in a model in a way that makes it easy to build a sub-model, if you just want to look at a particular system, look at -- Or particular groups of species, and I think that's useful, and that's another spot where this working group would say, yes, we've kind of taken the broad look with the big model and come to some conclusions, and now we want to have a more focused, refined model on a specific issue, or we need to do some additional research based on sort of the first-cut look on looking at the larger model.

Those are the sorts of questions that we would want the working group to help out with, and then, also, finally, this idea of having the quarterback, somebody who is in the region who can run the model on a regular basis and kind of maintain those data flows, data streams, for when you need to update the model or when you need to make some revisions to it.

How that's been done in other regions in NOAA is often there is someone at the NOAA Science Center who is a sort of an ecosystem modeler, or part of an ecosystem modeling group, and I don't think that's the only solution. There is the agency person, from one of the state agencies, or other approaches are certainly a good idea, but to have sort of a local quarterback of the model, and sort of Tom and Roger, and I will be glad to weigh-in too, as sort of the coach for that person and sort of the SSC and working group members kind of acting as team members, but also a little bit of refs. It's like, okay, we can't really exercise the model in this way, because we don't have the right data, or to make those sort of calls that, if you want to use the model for management applications -- You can exercise the model in any way you want, but you need to sort of set parameters, set bounds, on how you would exercise the model in a way that would influence a management decision, and so that's, in my mind, what this working group is about, and I will let Roger correct anything that I said there.

MR. PUGLIESE: No, but just one last statement, in terms of the connection to the broader mandates, and this just leads in here. The council has approved an implementation plan under the Fishery Ecosystem Plan II for ecosystem-based management, a two-year roadmap, of which it identifies development of ecosystem models and capabilities as priorities and action items under that.

The real hook I was going to make is that NOAA Fisheries nationally has just published implementation plans for NOAA Fisheries directives that are identifying within the centers and regions, et cetera, their coordination efforts throughout each one of the areas in the country. Under the South Atlantic draft plan that was published, it very specifically indicates coordination and support of the South Atlantic ecosystem modeling efforts, and so I think this is a -- Those are directives and advances that I think are encouraging this move forward as we continue to refine and advance it, and I just wanted to make that for the record, and so hopefully we see NOAA Fisheries get more skin in the game on opportunities, and I think just the fact that Howard is highlighting this, I think, is kind of emphasizing that fact.

DR. SEDBERRY: Okay. Well, thank you, Tom, Roger, and Howard, for introducing this South Atlantic ecosystem update. Our action item for this agenda item, or our action for this agenda item, is up on the screen. It's to consider forming a workgroup for this project to facilitate SSC input, when needed, and SSC review of the final model upon completion, and the presentation and Roger and Howard's remarks have emphasized this action item and how the SSC would be involved in continuing to kind of monitor the update, or receive the updates, and comment on the updates and the model and to continue to help this move forward, and so does the SSC have any comments or questions or discussion for this agenda item?

DR. REICHERT: A remark and a couple of questions. On the slide for data, we provided a lot of fishery-independent data, and there is a lot of other data sources that at some point it would good to evaluate and include, either within the states or academic institutions, and I know we've talked about that in the past, and it kind of looks like we were the only data source, and I think there's a lot more data out there, and there's a lot more data that was used, and so I just wanted to highlight that.

The other thing, and maybe, Howard, you can address that, but I know there is some activity in the Science Center, and so I think it's important -- Maybe you can address how this dovetails with some of the Science Center ecosystem efforts that are going on, and the reason I'm asking that is because it may be good to, if we decide that this workgroup is a good approach, to include some folks from the Science Center that may or may not be working on ecosystem issues.

DR. TOWNSEND: When you say Science Center, you're talking about the Southeast specifically, because I work all across the country, and I was like I've got a long list that I could talk to you about, but --

DR. REICHERT: I think Erik is still on the webinar, and so that may be a question for both you and Erik.

DR. TOWNSEND: Yes, and Erik can probably weigh-in even more so, but I know that Roger has spoken with Todd Kellison and Kevin Craig, and I've been working with him a lot, and so Todd Kellison kind of heads up their ecosystem branch, and then Kevin is in that branch, but he also does a lot of assessment work, and so he kind of works in both worlds of modeling, stock assessment modeling, and ecosystems, and he is -- I don't know if he has published it yet, but he has certainly put together sort of an aggregate surplus production model, and that is sort of just lumping niches together into surplus production models, and his next step is to kind of make it more of a multiple-aggregate groups, and so it would be something like this EWE model, but it's surplus production, and it's much fewer groups, because there is a lot of lumping together, but that

would be some interesting comparisons across the two models, a really complex, highly-articulated model and a really simple model, and sort of also then start to develop a range of tools that the council will have at its disposal for asking questions, and so that's some of the major efforts. I know they're bringing a post-doc in to sort of keep moving along with that surplus production modeling, or multispecies surplus production modeling, approach, and you probably have some more.

MR. PUGLIESE: I think, just to follow-up with that, one of the things I think that is key, even though those have gone on or are ongoing, I think it needs to be coming from on-high that these are part of their work activities and efforts, because I think a lot of what's been done for the production modeling and for the ecosystem status reports and all these different things that they are beginning to work on have been on the side with no directive, and so I think it needs to be, number one, very clear that those become part of individuals' responsibilities, and, if needed, more capacity to be brought on.

You have already said that they're already looking at that, and so I think, in our comments on the implementation plan, those are some of the specifics, and so, while you're saying that some of these are going on, they need to become part of some responsibilities and make sure that, in our region, we have the capacities at the Centers to be able to accomplish follow-up on what we're working on as well as theirs, and I think that's very critical that those happen.

DR. SEDBERRY: When I look at this same slide that Marcel was talking about, the updated data underlying the model, it seems that we're seeing a lot of biological data and fisheries data and state labs and the Southeast Fisheries Science Center. One thing that seems to be missing here is the NOAA Office of Ocean Exploration and Research that has been doing a lot of habitat mapping of reef habitat in the Southeast this year and last year, and I think they're still on the schedule for additional work in the coming year.

I think Daniel Wagner is the data person in charge there, and certainly the new coral maps that they have updated -- There is a lot of additional coral habitat, and there is a lot of biological observations coming from those cruises as well that might be useful for wreckfish, deepwater coral, and other things.

MR. PUGLIESE: Yes, and I think the one last point that talked about mapping sources -- I think that was a quick-put-together slide, I think, because, definitely, as we've been evolving our online spatial information system, that's been one of the targets, is to pull that together, and, as we go from Ecopath to Ecosim to Ecospace, I think it's going to be critical that a lot of -- We draw on many of these different ones, which are having the direct coordination with those ongoing efforts, and so I think it's critical that those be brought in, and it's really going to make a big difference as we evolve into Ecospace.

I think one of the big points that I made before is that's going to -- There is some real opportunities to look at this spatial capability, because they have evolved it further, but it's just we need to get to that next step and then engage Jerome Steinbeck with the consortium to figure out how we more effectively actually use the real spatial information on habitat, which a lot of capability wasn't possible before, which Ecopath and Ecosim and then now Ecospace is getting to. Yes, I think that's critical that we use the most recent, because there is not only spatial information, but, as you

said, a lot of the biological information, for some of the species that we may not have that complete diet, et cetera, information for.

DR. SEDBERRY: Any other comments or questions or suggestions?

DR. WILLIAMS: I was just going to mention what the Center has sort of been doing lately with respect to ecosystem, and so one -- Well, the Center is in transition, in some ways. We're trying to consider realignment, and we've got decreasing budgets, and so we've got a lot of things going on, but one thing that has emerged is we have created a division-level person, Mandy Karnauskas, who is now sort of going to be our ecosystem lead for the Center, and so she'll be a good point of contact.

We're still discussing what kind of resources we might realign to basically feed her division, and that's -- Like Howard mentioned, Kevin Craig is one of the people who has been sort of looked at, but the problem is he's in the assessment branch right now, and so then we would be faced with a tradeoff of do we want to devote time to ecosystem stuff but then at the cost of less assessment capabilities.

I just wanted to fill you guys in that that's sort of the conversations that are going on at the Center level, but I would also say that I appreciated Tom Okey's point about needing a quarterback for this thing, and I couldn't agree more, but, if this is an important thing for the South Atlantic Council, then a memo or something to sort of nudge the Center in that direction, because, right now, the Center is sort of making decisions, I think, on their own, but, if there is input from the councils on which direction they would like to see us go, I'm sure that would carry some weight.

DR. SEDBERRY: Thank you, Erik.

DR. BUCKEL: This is more Ecopath questions for Tom. If folks want to continue the discussion of the quarterback, then maybe I will hold off.

DR. SEDBERRY: Okay. Does anybody else have any suggestions regarding the quarterback? It's a very important position here to move this forward, and maybe the council could nudge the Center into supporting that. Go ahead, Jeff.

DR. BUCKEL: I guess I -- Maybe this has to do with the quarterback, but how far along is the Ecopath model, and this goes, I guess, to Tom or Roger or Howard. There has been a mention that there is some other datasets to get or -- I am curious if it's 50 percent there, or maybe it's 95 percent there, because there has been -- I know there's a set of diagnostics that Jason Link, and there's others, probably, that have similar things, but these are some internal checks you can make of an Ecopath model, like how biomass changes with trophic level, et cetera, and so has that been done, and so it's getting closer to final completion of the Ecopath side, or are we still halfway there?

DR. OKEY: We're halfway there, and we haven't done any of the diagnostic tests that Jason has put together and discussed. We haven't done the time series fitting of the model, because we're just waiting to finalize the diet composition refinement, but we have the time series data, which is, oftentimes, such a big challenge with putting together these models.

In most cases, in my experience anyway, it just takes a lot of effort to assemble these time series, but these were delivered to us by folks who have put it all together for the region, and so those are beautiful time series datasets, and so, as soon as we balance the model, after diet composition and the MRIP adjustment that we talked about, then we're going to be able to fit time series, and that's really the first step for refinement, because it will, essentially, adjust the vulnerability settings and the predator-prey relationships throughout the model in order to align the model behavior to the past ecosystem changes and make it more useful as sort of a main step that we want to get to.

Then we can start really examining it with some of the other diagnostic ways of assessing it, from both Jason and then Beth Fulton has a lot of ways to do that too, but, actually, we are looking forward to finalizing those refinements to diet composition, and Samantha Binion-Rock, I was consulting with her, and she's in your region, and she just finished the Pamlico Sound model, as you know, and she has really collected a lot of her own diet composition information for that.

I am already tapping into sort of regional experts for the diet -- In addition to adding the data from Tracy and Marcel and the other gentlemen there, and so we're pretty close to doing that. Then we can just start doing -- Well, we can start doing the scenario simulations even before we fit the time series, just for curiosity, and see what the model is telling us, but, of course, we want to fit to the time series and start to really calibrate it and refine that.

I think, to get to really maybe the point, these final adjustments and this final re-balancing is sort of kind of a key point at which we could have some official review from the council, especially if it's going to move forward in the region, and I can't see why it wouldn't, as being a useful addition to the council deliberations and process and for the whole region.

MR. PUGLIESE: Just to that point real quickly, one of the most important things, I think, is the evolution from where we were in the last iteration here, and it really expanded the fleet dynamics and some of the most detail that I think is going to move this forward in different ways that we haven't been able to do in the past that really do get it further down the road in terms of being something that ultimately is going to be more useful, and so I think that is a very critical thing, and there is very close coordination on building how the queries went into ACCSP and all those things to make sure that that can track into things that we can review and look at into the future.

MS. LANGE: I want to preface my comments with I believe that we really need to look at ecosystem interactions, species-by-species, fishery-to-species, environmental and climate and all of that, but color me a skeptic. I was involved with the Chesapeake Bay Ecopath/Ecosim initiation back twenty years ago, and my skepticism from then continues.

To be able to do a full-fledged stock assessment is complicated enough, and we have data issues just for landings, for predator-prey interactions on an individual species basis, and it concerns me when you see horrendograms, from Jason Link, and just, when you see that on the screen, and you see 142 complexes or groups or whatever, to think that -- To believe that someone, to think that someone believes, that we know enough information to make all those connections and to put it into a model -- Just because we have the computer capacity to develop an enormous model and to accept all of these data inputs and to spit out something at the end -- My concern is that managers and the public or whoever, ourselves -- My concern is that, because the model will spit out an answer, that's the answer that we think we need.

I guess looking at things on a -- Like the black sea bass and snapper and looking at smaller segments and everything like that, that all makes sense to me, but to envision all of that multispecies complex interaction is going to come up with simple answers, again, that concerns me, because once the number comes out, how much weight is going to be attributed to that, when we, at this point, still, after a hundred years of doing stock assessments internationally, we are still having concerns with coming up with acceptable stock assessments that are considered best scientific information available.

My concern is that what weight is put onto these type of analyses when -- As far as what are managers going to use it for, and I'm sure everybody understands my questions, and I'm sure that everybody at the table has similar concerns, but I wanted to make sure that my concerns were put on the table.

DR. SEDBERRY: Thank you, Anne, and you're right that you're not alone in those concerns. I think everybody has those concerns, and we could probably spend the rest of the week discussing those concerns, but I am glad you have expressed those on the record.

DR. OKEY: I could just address that very briefly, if you like, and I think perhaps Howard might want to say something as well, because I think the Chesapeake Bay model was involved in that as well. I think thank you for that, and we always need to have that comment, and I think it's especially critical in the way you articulated your question at the very end. It's sort of like exactly the answer as well to the overall question.

These ecosystem models, this is what we have been thinking about and grappling with for over twenty years actually, and Jason Link was, if I recall twenty years ago, was the biggest critic of these ecosystem models, and for all the exact correct reasons that you have laid out, and so what we have always said is that, relating to that last question that you articulated, is that we could cause -- You could cause more harm than good, actually, is what you're saying, because, if are not communicating what the simulations are actually -- What they are good for and what they are useful for, if you are not communicating that well enough to people, then you're doing a disservice, and so we have to really make it clear that -- At least early on, we were saying that one of the reasons that this modeling approach is useful is to point out that there may be dynamics that we weren't expecting and that there may be additional -- The strength of the predator-prey dynamic forces or other environmental forces on the whole system might actually create a type of result that you weren't necessarily expecting.

Now, that's a different kind of objective than hanging your hat on a particular number or a particular magnitude of change or result that emerges from a simulation, and so I always used to say, way back then -- I always used to say that we don't want to hang our hat on the actual quantified magnitude of change that our simulation is indicating, but we want that result to inform us about the direction of the dynamics or the kinds of dynamics that might emerge, and, aside from the role of providing questions, providing hypotheses and integrating the data that would be useful in this kind of thing, and I think that general kind of qualitative result is quite useful and valuable.

Nowadays, people might actually be getting more confidence in the magnitude of some of the changes that come out of this, especially with the time series fitting the calibration of the model. People have been quite surprised at how useful and accurate some of the results have been, but I don't need to -- I mean, that's just a debate for the future and the SSC, but those kinds of things

emerging are interesting though, but, yes, the point that I'm trying to make is that we really want to communicate the limitations of what the results are informing us of these simulations on a case-by-case basis, depending on the quality of the data, and also just to make the point that it's meant to complement the single-species models or the models that might be a lot more accurate for specific questions about the stock, but then there's sharing of the results and information amongst the models to iterate and make it more valuable. Howard, do you have any thoughts on that?

DR. SEDBERRY: Briefly to that point?

DR. TOWNSEND: Just real quickly, I agree, and that's why we tried to lay out there in the charge that there would be different levels of review. There is sort of review for this very large, highly-articulated model for thinking strategically about this system and starting to sort of kick the model around to explore these what-ifs and then using the data streams, the understanding, and the expertise around that model to build smaller models for more tactical decisions, similar to like a stock-assessment-decision-making process.

I think the big thing here, in my mind, is that -- You're right that there is no model that is ever going to be perfect and capture everything, but you're going to have stakeholders with mental models in their head about how the system operates, and, if every stakeholder has a different mental model, then every mental model is going to come to a different conclusion about a particular action. If we can build these more quantitative models that aren't perfect, but at least start to develop a shared understanding of the system, I think that helps just the management move forward, and so I will leave it at that, and we can talk more about the Chesapeake later.

DR. SEDBERRY: Thank you, Howard. We have about an hour left in our meeting here, and we have a few more topics to cover, and so let's see what we can do to wrap this up. Marcel, did you have something?

DR. REICHERT: No, that's what I -- I think we still need to address whether or not we actually want to form that workgroup, and then I think we need to address the developing the terms of reference and the timeline and all that kind of good stuff, and that doesn't need to happen -- I don't think that needs to happen today, but at least it will be good for the committee to say, okay, we support forming a workgroup and then how we are going to develop these terms of reference and a timeline and suggest participants and stuff like that.

DR. SEDBERRY: So the SSC agrees that we should form a workgroup? Okay.

MS. LANGE: Was that a question?

DR. SEDBERRY: Yes, sort of a question. Our action item is to consider forming a workgroup for this project to facilitate the SSC input, and so I think there is consensus that the SSC should form a workgroup to facilitate our input.

DR. BELCHER: I think I would like more information on what the workgroup-specific charges are going to be. I think that's the hardest part is, is there a need, in a broad sense, and sure, but specifically what and what kind of time constraints do we have. I mean, right now, I think it's kind of conceptual, and they've got the information that they're working to develop, but, at this point, what are we providing for information? What are going to be our terms of reference moving

forward? I mean, I almost feel like reserving the right for when they get to a certain point that we need to have those conversations, I think, but, right now --

DR. SEDBERRY: That's a good question, and I would suppose when the council or when the existing ecosystem workgroup that has put together what we've seen so far has a question for the SSC, they would bring it to the SSC and say we need your input for this, and then the SSC workgroup would take up that question at one of our regular meetings, and we would provide input for that question, and so I think the tasks would come from the council or the ecosystem model workgroup.

MR. PUGLIESE: I think the reason this was brought forward to the SSC is early involvement in even the finalization I think would be critical to advance this, and I think what we had talked about earlier was potentially having a number of different things, and I think it was laid out to help finalize where we are and to advance how that then goes into review of the capabilities, and I think Howard got into that, of what -- All the kind of base review of what the model is at that point.

Then it would go steps beyond that, in terms of then how do you translate that in the Ecosim with some scenarios to understand how the model functions, and there is a progression there, and I guess that's where I had mentioned the idea of potentially even a standing committee or something, because, with that type of concept, you're looking at different -- It could go that way, but they would be tasking a workgroup to first look at inputs on here and coordinate that with that modeling workgroup.

Now, that modeling workgroup is a standing group that we had at the grace of the council and the LCC funding this, because that funding was to get it to basically this point, and, unless there is additional resources that either come through NOAA Fisheries, or we do have additional support, this basically is the end of kind of the funding stream for that group, but what I'm trying to do is to see if we can more formalize the ad hoc nature of it, because there is such complexity in that group, to advance it beyond where it is now, and that's going to be important.

The SSC can really provide, I think, foundational guidance on how do we take the next steps, and then, once this is finalized, which is -- You heard Tom and Howard, I think, and we're very close to seeing the transition from the Ecopath to Ecosim capabilities, and that becomes very critical to make sure that whatever is there can advance to a tool or a capability that the SSC can move, and so I guess what I'm responding to is that some of those are a little bit uncertain, and, if we have a chance to sit down and determine what those different stages are, maybe that's something that could advance the first step of how a workgroup would be involved or a small standing committee that would work with that existing modeling workgroup.

DR. BELCHER: I am just thinking about relative to -- As we've gone through and developed workgroups, we kind of have a standing charge of what we're doing, and, right now, it's kind of an amorphous we would like to have people engaged, but, right now, I wouldn't even know what questions to bring forward or to ask, and so we're working on these other things, and so, as we're spreading that out, at what point are we going to engage it, because those of us who are involved in other working groups -- To say that, yes, we might overlap and have -- The workload may be something that is part of that problem, too.

DR. SEDBERRY: Right. I agree that it is kind of amorphous right now, and so the way the SSC kind of works is that the council or some entity brings us something to review, and it sounds like you're asking for us to come up with something that we ourselves would review, and I'm not sure -- To me, it's kind of -- It's very nebulous what is being asked here.

MR. PUGLIESE: Well, I think the original idea was that, as it finalized, then the workgroup would be reviewing the data inputs, the structure, kind of what that first level of the Ecopath -- That one, I think, is probably the more straightforward idea, and, if Rob had been here, I think maybe he would have weighed-in a little bit more on some of that, because I think that would be the more straightforward -- There is just that opportunity, as you get to that point, is that even there could be some direct input as it's getting finalized, and this is the last iteration, to make sure that the MRIP information is put in and if there are other aspects that need to be touched on, as it's being discussed, that maybe it will do, but I think that first iteration was really going to be the review of the capabilities, so that then it could transition to the next stage, and then a different workgroup would probably be looking at how do you look at scenarios or recommend scenarios to begin to test the Ecosim capabilities.

It's a different creature, and so I am not really sure how to respond, other than I think it would be really useful to have at least key members involved in the very short-term finalization, before you get to that first review, and then that review will happen, and so, I mean, the way the workgroup could be is maybe it would be tied -- The terms of reference could be tied to the review, but just have early involvement as it gets to that first step, and so that's at least the conceptual way of advancing.

DR. NESSLAGE: I appreciate all the work that has gone into this. This is an interesting model. I guess, from an SSC point of view, I think the cart is being put before the horse. I think, if you're considering using this in management, we have to have management goals and objectives in mind first, because anyone here could review your model, but the applicability to management will all depend on what the management goals and objectives are, and so it might be great for analyzing the impacts of menhaden in the South Atlantic, but that's not a species we manage, and so that might not be what you focus on.

Maybe you want to focus more on building certain sub-models that are more important to the South Atlantic Fishery Management Council, if they're the ones who are going to be using it, and so I would argue that reviewing the model might not be what the SSC should be doing at this point. Perhaps looking at what's been constructed so far and seeing what the potential uses are and the outline, I think that was one of the things that Mike had written down, what the potential uses are, and what the potential goals and objectives for the council might be is what this SSC should be doing, and then determining whether or not this model, as it currently is constructed, is sufficient to meet those needs, and, if not, what do we need to do to get it there. That might determine who the quarterback is, because everyone has different specialties.

DR. SEDBERRY: Thank you. Well put.

DR. REICHERT: I think you basically said what I was going to say. Perhaps providing guidance to where we want to go and what questions we potentially want to add, and I completely agree with Genny, but I do agree with Carolyn that that's kind of a different type of working group than the working groups that we have created thus far, which were really very focused on very specific

questions with a relatively short timeline. This may potentially be a little bit different, and I am not --

DR. NESSLAGE: To that point, I think the SSC -- I think the group would be different, and I would encourage it to be members of the SSC as well as members of the council, and perhaps stakeholders as well, to see what sort of burning issues could be addressed by this sort of an approach, and it's not just the SSC's purview there.

DR. SEDBERRY: This seems to be growing into a bigger task than we may have time to deal with at this meeting.

MR. BELL: You all just hit on something that resonated with me. Ultimately, if you kind of think of proceeding with this with the end in mind, it's okay. From a council perspective, you communicate certain things to us now in a certain way, and we deal with single species and an ABC and we deal with that, but imagine -- This is what I could use some help with, because I've struggled with this from the beginning with the concept, is how do we take all of this information and turn it into real-world management decisions that perhaps end up in regulatory adjustments or whatever? How do we take this into the real, practical world, from our perspective, at least the council, of dealing with things like -- We would be going from single species to now multiple species, and we might be looking at a series of ABCs for these species, because they interact or something, and I don't know what that looks like.

I am just having trouble, or I've always had a little trouble, with how do we operationalize this to the point where things are communicated to us that we can turn into real-world management decisions, and what does that look like, and what does the hand-off look like? What does the information look like? What are we now -- If you can help us, at some point, visualize that, because, ultimately, that's where we're going with this, turning it into actual management actions, and so that would be helpful at some point.

Now, maybe that's -- But that's why I'm saying if that's the end goal, if that's where we want to be, where we're using this, what does that look like actually, and how do we communicate what things? Then it's like we have to be able to communicate with the public and sort of get their understanding and their buy-in. When you some of those graphics up on a screen, they just kind of get a little concerned, and it's hard to understand, and so I guess helping us eventually understand the hand-off from science to management and what does that look like in the future, if we go down this road, and that would just be really helpful.

DR. SEDBERRY: Thank you, Mel.

DR. ERRIGO: I am going to try to see if I can distill everything, so we can look at what kind of workgroup maybe we want to form or committee or what. In a perfect world, the council will say we want to look at these kinds of things and here is a model that does all of this stuff, and the SSC will say, well, we will evaluate the model and see what kind of information it can give us that will answer these questions.

Unfortunately, nobody, I think, has the full understanding, especially at the council level, of what it is that this tool can give us, and so perhaps a basic task that first needs to be done is we need to look at it and see what kind of information can we get from it and is it useful for that and is

everything parameterized in such a way, the data and everything and decisions that were made, made in such a way that we can get useful information on the things that the model was made for.

This last bullet here, input on what analyses and applications the model can provide, and should provide, and maybe we should start there. Once that's done, then that information can be transmitted to the council, saying, well, we now have a tool that can provide this type of information, and then we can get more into the nitty-gritty of, well, we would like to see these kinds of analyses, and then we can drill down further into, okay, well, can we get these specific kinds of things from it.

DR. SEDBERRY: We have listed here some things that this workgroup might consider, what kinds of things might be brought to the workgroup, what kinds of products the workgroup might be able to provide back to the council. I just think this all needs to be fleshed-out a little better and perhaps brought to our next meeting to establish the workgroup, if, after that fleshing-out, it looks like that is something that the SSC can do. I think we all agree that it is something that the SSC can and should do, but I just don't think we can put together this workgroup now, based on what we know now, without giving it some more thought.

MS. LANGE: I guess what Mike was just talking about addresses Mel's question, but it doesn't address what was brought up for us to do. The workgroup, I agree with Mike's interpretation, because that would serve our role as assisting the council in its decision process, but, again, that's a next step beyond what I think Roger and the crew wanted, which was for us to get involved in the actual final development of the model.

DR. BELCHER: I think some of it -- At least for me, I can tell you that my comfort level with understanding an Ecosim or Ecopath model -- I know there is a Chesapeake Bay model, but I have not been immersed in it, and I wouldn't even know how to -- Being in a workgroup, there would be so much more front-loading of information for me to get up to speed on that, and I just -- Right now, I am kind of throwing out my naivety on it, but I really wouldn't know how to comment.

I mean, that's part of the problem, is what questions do you want us to answer, and I'm like, I don't know what it's capable of doing, because I haven't seen it in practice. Anne has at least seen the Chesapeake Bay -- At least you kind of have a concept, and I just see a blob right now, because I don't know what it can and can't do.

I know it takes this information and it puts it in and it integrates it and builds relationships, but I don't know enough about the innerworkings of it to feel like I could give strong guidance on it, and I'm speaking for myself. Maybe there is a group of folks in here that have a much stronger aptitude for it, but that's where I kind of feel like I'm over in the corner shrinking, because I don't know what I can offer to it.

DR. SEDBERRY: I am in the corner shrinking with you. I feel the same way, and I kind of wonder -- I know this is an ecosystem approach, but we still do stock assessments species-by-species while considering other species, and where in SEDAR, for example, would this model come into play for a stock assessment on red snapper or black sea bass, that we know are interacting with each other? Where in the SEDAR process does this come into play? If it does, then that's what we would comment on, is the stock assessment that comes out of that process.

I don't feel that I could comment on the model itself or even make decisions about when it should be applied, and that needs someone that understands it a lot better than I do to do it, and then we can see the results of that in the stock assessment and comment on it at that stage, and so, in that part of the charge to us, I am kind of with you. I don't know what to do.

MS. LANGE: Could we make a request to Roger's group that they put together a demonstration example for us to review at the next meeting to help us get an understanding of these are the basic inputs, these are the outputs, this is what would feed to the SSC to evaluate for us to make recommendations to the council, I mean just so that we have a feel for a subset, two or three species, or just something relatively simple, that would be something that we could review in an hour or two during our meeting, in order to figure it is that they would be asking of the SSC, because just forming a -- Again, they had a whole list of things of what an SSC workgroup would do, but not knowing how that feeds into our role in advising the council was -- Anyway, that is --

DR. SEDBERRY: That's a great idea, and it would certainly give something concrete that we could look at and evaluate.

MR. PUGLIESE: In a perfect world, this would have been completed, and what was going to come forward to the SSC originally were some of the things that we had talked about, running the model and showing the SSC what it looks like when you manage all species at MSY or picking some key species and running simulations between black sea bass and red snapper to see if there is a signal that shows that, some things that would basically begin to open the door about how you advance something like this.

I think, originally, that was going to be the first steps here. I think what you've got now is the opportunity to guide how we finalize, but it sounds as if there is a comfort level on doing that, and I think maybe just individuals that are very familiar, like Rob, to be involved in discussions at least as it gets finalized might be something, and we'll reach out on doing that, and then, if we can get support to maintain that workgroup, which is still something that has to happen, then we could see about how you advance that beyond here, because there are key individuals, including Howard, that know how you can take it from the operational, or the capability function, to operational, and some of the models that were done for the Florida Keys, and the most recent ones -- Some of those actually have those things where you get to the management strategy evaluations.

I guess the statement that concerns me some is that we're always getting kind of short-end of the stick in the Southeast, because this has not been a high priority for our region from different areas, and so we had to kind of go out and pull resources to get where we are now. Other regions are getting annual updates of ecosystem models and are using them for management strategy evaluations for key managed species, and I think, in the scope of work, at least we highlighted -- What we were trying to do is highlight how some of those actually are being used in a number of the other regions in the country, and they are being directed to move that forward.

DR. SEDBERRY: It would be great to have some examples from this region.

MR. PUGLIESE: Yes, and I think that's -- Well, the problem is -- The example that I can think of, probably the most predominant, would be a presentation on what done in the Florida Keys, in terms of translating the model into management strategy evaluations.

DR. SEDBERRY: Thanks, Roger.

DR. LI: I just wanted to follow-up on Anne's comment about the request. It's a good idea to request a clearly stable input and what is output, and the total message is it's a very complicated model. It's a big, complicated model, but we do need to know input and output, and, also, I would add to that a request. I am thinking that it would be great to have the linkage to the current stock assessment that we are doing and also the linkage to the management and how that demonstration -- One example that I can think of is, I know for the blue crab stock assessment in Florida in 2009, they used an Ecopath model to come up with like time-varying natural mortality estimates, and that input went into the stock assessment model, and that's one thing that I think of the application link to the assessment and management.

Also, another thing, another application, may be like the habitat management, because Ecospace is like a spatially-explicit model, and habitat management and also like management for maybe stocking and restocking fish species or something like that, just as some examples to have that linkage from the output of the model to management and the stock assessment, and that would be very helpful.

DR. SEDBERRY: Thank you. Do we have a next step here?

MR. PUGLIESE: I think the next step is, number one, we've got to focus and absolutely get this model finalized, the Ecopath side of it, and do what we had identified as those. I think all I was attempting to try to do was to have some kind of early input, as it's getting wrapped up, but I think it just will be done. We can get these things to the next stage and update with the MRIP components and deal with the diets and address some of these specifics to advance, and that will be the kind of final format of the core components.

We can do what we had talked about potentially beginning to do, is create some scenarios, such as MSY across all species, a number of different key species, to just see what the capabilities are, and then maybe also have the ability to see where it's been used in other places, such as in the Florida Keys, and so that would be done in advance of the next SSC meeting.

DR. REICHERT: I think it may also be good to look and see if there is a quarterback on the free market, because one of the things I was thinking -- I think we all agree that that person is critical for the further development, and one of the things I struggled with a little bit is, if there is no such person, or I assume that that will need to come with some funding, and if that funding is not available, then this working group may be functioning in a vacuum, and so I think it would also -- I would think it would also be good to see if we can further explore that, so we at least have someone in the region who can help the council and the SSC and others in further developing -- Once the model is finalized, further developing that, so we can actually ask those questions, once we have identified the questions we would like to see answered.

MS. LANGE: Again, the other issue that I have is we as an SSC, or in the Southeast region, have a hard time -- That's not the right word, but our stock assessment scientists are at wits end as it is. I mean, they have so much work for so many stocks and so many issues to work on that are immediately needed for management advice, and how do we fold in the extra -- You're talking about adding a quarterback, and the most logical place for that to be, or the simple place, would be at the Southeast Center, but, again, they are so strapped as it is to get the work done that's

already needed, and I guess I'm just -- Again, call me skeptical on how that can be folded in without being detrimental to us getting what we need for advice to the council as it is.

DR. REICHERT: To that point, I completely agree with you, but that's also why I think it's important to explore that at the same time, because then, if that's not going to be the case, then this exercise may be a moot point, which I hope it's not going to be, but, yes, I completely agree with you.

MS. LANGE: Roger, I think you made that comment before, that other regions are getting extra money or extra focus, and so that wasn't negative toward what your group is doing, but it's the big budget system. I mean, somebody has to make a decision on where the priorities are, and, if this is a priority, then it would really bother me to see the monies coming from an already short supply of stock assessment people, and I think it needs to be something that can be added on.

MR. PUGLIESE: One last point about that. That's why I said some of those things, but hopefully we can see if that is a national directive, which, with the implementation plans for the entire country, it is supposed to be, and specifically identifying support for ours, and hopefully we can see something occur and advance on this.

One of the beauties though, on the flip side of this, of our earlier collaboration with the Landscape Conservation Cooperative, is that it has provided us a partnership where it really is also making those linkages between land inshore and offshore areas in a bigger way than has ever been done before, and so we are in some new territory on how, in our region, with so many estuarine-dependent species, some of that spatial and habitat information on the capability and use of this system under Ecospace is going to be really interesting to see how it evolves, because we have yet to really dig into, and I don't think almost anybody nationally has used the next generation of Ecospace, which now has evolved to where you can use more of the real habitat information versus the simulations that the model creates, and so I think we just don't want to lose those partnerships, but also the capabilities.

Now, the one aspect of that is that the LCC does not have resources for longer-term support, other than some of their bigger-picture blueprints, but there is still some connections with us, and so we're looking everywhere, and we have been in the past, and so we're going to continue to, to see this move forward and get to a point that it's clear on how a tool like this can be useful in our region, and so hopefully we'll get more commitment from NOAA Fisheries in our region, but, at the same time, we're going to advance and continue this work to try to move these types of concepts further, so that at least we're not totally behind the curve for our region versus some of the other regions in the country.

DR. SEDBERRY: Thank you, Roger.

DR. BUCKEL: I am going to try to tie a few things that I agree with that have been mentioned around the table together. Erik mentioned that it would help if the council pushed on -- Wrote a letter to the Center saying that they're in support of this work to try to get funding, and that may help get a quarterback, but then Mel mentioned that he wasn't sure what this could provide, and so I think it -- Genny mentioned that it's good to have the question ahead of time before you finalize the Ecopath model, and so one potential way forward is a presentation to the council on not this Ecopath model, but the other Ecopath models that have been used to help either with a

single-species model, to improve it, like Yan mentioned, the blue crab model, or -- Because it's not necessarily what comes out of Ecopath is used for management. It may improve the single-species stock assessment approach, or it may help with an MSE.

A presentation to the council on where these ecosystem approaches have been used, and then the council could say -- Maybe even they could say, well, we like this, or we don't like this, and then that can help guide the questions that then help with the finalization of the Ecopath models, to Genny's point about, if you have the questions that you want to address, that can help inform where you put the time into finalizing the Ecopath model, and so that would also help the council then have a more informed letter to the Center of this is what we want done and money spent on, where the money should be spent for ecosystem approaches in the South Atlantic, and so I apologize if I have missed any other points that were made, but I was trying to tie some of these ideas together.

DR. BELCHER: To Jeff's point too, I think it's the idea that we're not -- Conceptually, we understand the need for it, but, contextually, or putting it in the context, is the hardest part that we're struggling with, and so, if we can put it in a context and understand that, I think that, at least for me would be helpful, because, like I said, conceptually, I get it. I just don't understand how, in a context for us, it works, and so having other examples I think would be extremely helpful.

DR. REICHERT: All right. Any other comments? I think we have a path forward, and it looks like we will be discussing this again in our next meeting and maybe discuss whether or not a working group would still be a good idea and then develop some terms of reference and a timeline. All right. Thanks to Tom and Roger and Howard for presenting this to us. George is back. We just wrapped this up, George.

DR. SEDBERRY: Really? Thank you. All right. So we're actually moving on to Item 12, the council workplan update, and this is Attachment 26 and 27. Just kind of a quick overview of what's coming up, and do we have a tag-team on this? Christina or Chip or Roger? I believe Mike will be presenting this.

COUNCIL WORKPLAN UPDATE

DR. ERRIGO: I will just run through what's going on, the amendments that are out there now, and, if anyone has any particular questions or anything, I will pull on the expertise of the people who are actually in charge of those amendments, but I will just run through what's going on. There are a lot of, actually, amendments and things that are going through the works right now, and some of them have just been gone through final approval, and some of them are on the horizon, and so we have the -- Christina is working on CMP Framework 6, which is king mackerel trip limits, and then Amendment 31, which is the Atlantic cobia management, looking at Atlantic States taking over management for that one. Has that one been approved yet? I can't remember, but I think we might have approved that one.

Coral Amendment 10/Golden Crab 10/Shrimp 11, that all has to do with access areas, and that is Chip is in charge of that one, and that one is still in the works. The Fishery Ecosystem Plan, that's Roger, and that one is always being updated. Snapper Grouper Amendments 43 and 46, that has to do with red snapper and recreational reporting, also Chip's amendments, and those are still going through the process, and so they -- The visioning amendments have both -- The commercial

visioning amendment has been approved for final review, and the recreational visioning amendment, I believe, is up for final approval in December, and so those should be finished up.

Yellowtail snapper, just different management measures, and Regulatory Amendment 32, and the council will be taking a look at that one I think in December. Blueline tilefish, Snapper Grouper Amendment 38, is on a bit of a longer timeframe. We were waiting to see what happened with the revision assessments for blueline, and that had to do with updating the ABCs and ACLs and, if needed, management measures.

Regulatory Amendment 29 is best fishing practices, and so descending devices and venting and things of that nature, and that one is -- I think, in March, they will be taking a look at that. Sea turtle release gear is also Christina, and that's just looking at adding different types of sea turtle release gear for the recreational sector.

Red grouper rebuilding, that one -- This Regulatory Amendment 30, and that one was started a bit ago, after the last assessment for red grouper, and it has been going through the process, and it has been delayed somewhat, as they were waiting on looking at the results of the revision assessment. Depending on what the revision assessment shows and projections from the F equals zero, some of this may have to change a little bit, and so we're kind of waiting to see what happens there.

Amendment 47 was voted down in September, and so that went away. Spiny lobster, the modification of the ACL and the use of recreational traps, and I think that's still in the works, because that's a joint amendment with the Gulf, and so those take a bit longer. Spiny Amendment 13 is coordinated management with Florida. Again, that's a joint amendment with the Gulf, and so that takes a little bit.

Dolphin Wahoo 10, adaptive management for dolphin, that fell a little bit lower on the priority list, since there are so many amendments, and so the council will be looking at that one at a later council meeting. Joint commercial logbook amendment, that has to do with the commercial fishery going to electronic logbooks, and that one still hasn't really congealed yet. It's still in the works, and so you will see that one come by at a later meeting.

The bycatch reporting amendment is Chip, and I'm not sure where that one is now, and I think it's lower on the priority list, and so it hasn't -- It will come by you guys later on. The recreational AMs amendment, and so the modifications to the recreational AMs, that one will be coming up soon, and that's Brian's amendment, and Abbreviated Framework 2 is the changing of the ABCs and ACLs for black sea bass and vermilion from the last assessments. That one is already going through the works for the original ACLs from the old MRIP data, and then, depending on what happens with the revision assessments, they will have to be updated again through this abbreviated framework, unless black sea bass is overfished, and then that's a plan amendment. That's everything that is in the works now or coming up pretty soon, if anyone has any questions, and hopefully the amendment leads are still somewhere, and I will try to answer if I can.

DR. SEDBERRY: We don't have any specific action items here, but it's just --

DR. ERRIGO: No action items, no.

DR. SEDBERRY: Any questions of the council staff?

DR. REICHERT: The ABC control rule is an amendment, right?

DR. ERRIGO: Did I miss that? It's not on here. It's in your documentation. That is an amendment, and John talked about -- It's not on here because it was an actual item on your agenda, and he talked about the timing of that one, and it looks like it might be pushed a little bit further down the line.

DR. SEDBERRY: Thank you, Mike. No further questions from the committee? It is now public comment time once again. Do we have any public comment? This is the final public comment time for this meeting.

MR. HUDSON: Thank you, Chairman Sedberry and what's left of the SSC here today. I'm Rusty Hudson, and I tried to listen in to everything since Monday, and I missed some portions, and so I have requested recordings, in case I need to go back, but I have a few short comments, and I guess, first, I would like to start with the Florida red snapper report that was produced.

We are a firm believer in the stereo cameras now, because of the random time drops, the captain's choice, the chevron traps, and one thing that I did not hear come up in the discussion, particularly in the area from Fort Pierce to St. Augustine, is the Gulf Stream's current effect on chevron traps and depth and time of the year that you can set that gear.

The second thing is longline and short longline for those same regions. You have a similar protocol of not setting the gear when the speed of the current is a certain rate, and those things need to be known when you're looking at the overall seasonality of whatever it is you're targeting. With the SEFIS and SERFS, however one wants to address that, it's mostly a spring/summer component, and there is a whole other part of the year that is missing, historically. This is where dealing with industry, I believe, helps out.

Going on also between Fort Pierce and St. Augustine, you have a hundred miles of Oculina Expanded Area that is now prohibited from certain types of gear types, like longlines and other types of things, like anchoring and grappling, et cetera, and so that has changed a lot of people's behavior, and I have even asked does the government have the ability to set longline and chevron traps in that area, and I don't know, but I have been told no, and I've been told yes, and so I really don't know.

The hotspots thing that was shown from the MARMAP/SERFS/SEFIS, that was pretty interesting. I like what I saw, but, then again, I think it exposes two things, what is absent, like white grunt, and you can see it was definitely not in our regions, but, at the same time, where you're not able to get with the gear, and that's an important factor.

The one thing I saw with the totals was scamp, and I didn't understand, because there is chevron trap, and there is short longline, but I did not see -- Well, you had ninety-eight scamps, but you only had eighty-two totaled up on the gear types, and then, for snowy grouper, you had sixty-six as a grand total, but only forty-nine on the gear types, and that's a little minor thing with red snapper and almaco jack, but I was just wondering why they didn't match up like all the rest.

The recreational black sea bass, going back to the eleven inches, and I'm not sure what type of bag limit you want to use, but it's probably a wise move, as big of a discard rate as we created once we went to thirteen. Also, in the 2013 period on, there was three years of not being able to use the black sea bass pots, and it also needs to be recollected every time people do any kind of commercial analysis for those three years. It's just been opened back up, with albeit right whale restrictions and stuff.

MRIP calibration issues, just like I had to get into the shortfin mako stuff, the percent standard error, the PSE, above 50 is, according to John Foster and Dave and stuff, not reliable, and yet, with like shortfin mako as an example, one-third of that thirty-eight years of stuff was above 50, and so you get to digging into all of that, and that kind of might create some nightmares for people, and one of the things that you all commented about was making three different changes like subsequently to each other, based on whether it's the MRIP calibration or whether it's the ABC control rule or whether it's SEDAR projects in the queue or needing to get into the queue. Those are kind of a strange thing. I agree with you all that I wouldn't want to see each year that you're just hammering the darned stakeholders, and that's tough.

The last thing that I will say is it would be nice, if I'm listening in, like I am remotely on webinar, to have the ability to public comment through the webinar, just like you bring in certain SSC members and stuff that are able to add to the discussion, and we believe that would be helpful, too.

The last thing is this report as you all are creating it, unless I'm having to re-listen again and again to the recording, I don't see this like we used to years ago. I see this, but I don't see that, whenever I'm watching the webinar, and so that would be a little more useful to when you all are typing your stuff and you spent a little time wordsmithing yesterday, and so that's an important feature of this SSC, and it's not a voting body, but it is sort of a consensus body, and there is part of us in the industry that wants to be here, but, again, we keep seeing delays with science, and it's hard for you all to get yourselves wrapped around it when it's not completed, and so apparently 2019 is not looking good for getting some of the work in the agenda done, and so a lot of stuff is going to carry over into the years after that, and so we have to deal with it, and we thank you very much for listening to the comment.

REPORT AND RECOMMENDATIONS REVIEW

DR. SEDBERRY: Thanks for your comments, Rusty. Any other public comment? I do not see any. Other Business, Agenda Item 14, is there any other business to be brought before the committee? No. Okay.

Report and Recommendations Review. As usual, we will provide a report from this meeting, and, as has been our custom in the last several years, is to use the overview document to insert our comments and our notes for each agenda item that is both in the agenda and in the overview document, and then we'll make a summary of that to present to the council at their December meeting in North Carolina.

The way we've been doing that is to present SSC remarks for each committee meeting, and so, for example, when the Snapper Grouper Committee has their meeting, the SSC has an opportunity to present their comments at that time for each of those committees.

DR. REICHERT: We have three-and-a-half weeks, and so when would you like us to submit our comments to you so that you can compile them and send them back out to the SSC? It would be helpful for me if you could give a couple of dates.

DR. SEDBERRY: That is an excellent question, and I wish I had given this some thought.

DR. REICHERT: You can send it out by email.

DR. SEDBERRY: I will do that today or tomorrow. For day one, we have all been through that, and we did that yesterday afternoon, and so day two and day three need to be gone through, or actually the whole thing by everybody, and so I hope to get -- We will send out Mike's comments in the overview document and get everybody's comments back, and I will give you some dates on that. Then we'll send it out for one final check, and then that is what will be put in the briefing book for the council meeting in December, and we do have a deadline for that, don't we?

DR. ERRIGO: November 13. By 9:00 a.m. on Tuesday, November 13. That's when we need to have the final report by. What I will do is, after we're done today, I will make sure that whatever comments that came in last night -- I will make sure that they're all incorporated in, and I will send out this version of the notes that has the entire meeting in it, and I will have anything incorporated, any suggestions that have come in over email, and then you can tell everybody how much time they have for that.

DR. SEDBERRY: When we get that, I will just reply to all with the dates that we need your comments back on for that, and so that should happen today or tomorrow. Is that right, Mike, when you will send that out?

DR. ERRIGO: Yes.

DR. SEDBERRY: Any questions about the reporting? Okay. Next meetings.

NEXT MEETINGS

DR. REICHERT: Do you need guidance from us which of those two weeks would be good, or is that something you guys are going to tell us?

DR. ERRIGO: I was just going to say that, if there is a week that like nobody can come to, or if it's really, really terrible, let us know, and that will weigh heavily into when we have it.

DR. SEDBERRY: When would you like to know that? By the end of this week?

DR. ERRIGO: Well, if someone right now doesn't like one of the weeks, let us know. Otherwise, by email, because there's a lot of people who aren't here right now.

DR. YANDLE: Strong preference for not the second option in the spring. That's going to be right in the middle of the run-up to finals for me, and marginal preference for the second week in the fall one.

DR. REICHERT: The second week in the fall would be my preference.

DR. YANDLE: The first week in the spring is preferable and the second week in the fall is preferable.

MS. LANGE: Julia, were we looking to have the spring meeting a little bit later, in order to finish it, or is that moot now, because everything is so far behind?

MS. BYRD: (Ms. Byrd's comment is not audible on the recording.)

DR. ERRIGO: As you consider, remember that the later weeks give you less time for your report, just FYI.

DR. SEDBERRY: Excellent point.

DR. ERRIGO: In the spring, it's not as bad, because, as long as we have it in April, you have a decent amount of time, but the October one tends to get cramped. We have three-and-a-half weeks now, although next year I think the week of the council meeting isn't as close to the beginning of December. It's like the very first week of December, and so the briefing book is very early, and so we have three-and-a-half weeks now, and we're having it that first option, the 15th to the 17th, just so you know.

DR. SEDBERRY: Thanks, Mike. Then the upcoming council meetings are shown there, and they're pretty much carved in stone, unless, of course, there is a hurricane. Any questions?

DR. ERRIGO: This is the one that tends to be hurricane affected.

DR. SEDBERRY: Any questions about the council meeting schedule? Anything else for the good of the cause? Thank you, everybody, for participating, both in-person and remotely. I know it was difficult for some of you to get here and difficult for some of you to even participate online, because of hurricanes, among other things, happening, and I appreciate everybody's effort and participation, and I look forward to your comments for the meeting report, and drive carefully, or fly carefully, however you are getting home, and we will see you next time. We are adjourned.

(Whereupon, the meeting adjourned on October 17, 2018.)

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Certified By: _____ Date: _____

Transcribed By:
Amanda Thomas
November 2, 2018

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