SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

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Transcript

Scientific and Statistical Committee

Dr. Jeffrey Buckel, Chair
Dr. Frederick Scharf, Vice Chair
Dustin Addis
Dr. Walter Bubley
Dr. Jie Cao
Dr. Chris Dumas
Dr. Jared Flowers
Dr. Kai Lorenzen
Dr. Genny Nesslage
Dr. Marcel Reichert
Dr. Amy Schueller
Dr. Fred Serchuk
Dr. Alexei Sharov
Dr. Jennifer Sweeney-Tookes
Dr. Steve Turner
Jason Walsh
Christina Package-Ward

Council Members

Dr. Carolyn Belcher, Chair
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John Carmichael
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Julia Byrd
Dr. Judd Curtis
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Attendees and Invited Participants

Shep Grimes
Tracey Smart
Julie Vecchio
Chris Bradshaw

Observers and Participants

Other observers and participants attached.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened at the Town and Country Inn in Charleston, South Carolina on October 24, 2023, and was called to order by Dr. Jeff Buckel.

INTRODUCTIONS

DR. BUCKEL: Good morning, and welcome to the October 2023 South Atlantic Fishery Management Council's Science and Statistical Committee meeting. My name is Jeff Buckel, and I'll be chairing the meeting. Along with Vice Chair, Fred Scharf, we thank you all for your attendance, either here in-person or online. Before we do voice recognitions, if you remember, from our July webinar, we introduced three new members: Christina Package-Ward, Jason Walsh, and Steve Turner. I promised a more formal -- To allow them to give a more formal introduction at our meeting in October, when we're face-to-face, and so, Christina, if you would like to tell us a little bit about yourself.

MS. PACKAGE-WARD: I'm Christina Package-Ward, and I'm an anthropologist at the Southeast Regional Office of NMFS, and I've been there about twelve-and-a-half years, and I work on social impact assessment for fisheries management actions, for the most part, but I have also done some oral history projects, and, recently, some EEJ work.

DR. BUCKEL: Great. Thank you. Jason.

MR. WALSH: My name is Jason Walsh, and I'm an economist at the North Carolina Division of Marine Fisheries. Most of my work is -- I do some survey work, collecting expenditure information about different sectors, and I help with the rulemaking process, fiscal notes, and I help support fishery management plans as they come up.

DR. BUCKEL: Thank you, Jason, and Steve Turner. I think you're online.

DR. TURNER: This is Steve Turner. I'm sorry that I can't be there, and I was looking forward to seeing everybody, but I had to cancel, this last weekend, for health issues. I retired from the Southeast Fisheries Science Center in Miami in 2018. I started there in 1984, and I worked on population dynamics of tunas and swordfish and highly migratory species, until the early 2000s, and then I worked on groupers and snappers, primarily in the Gulf, and some amberjack in the South Atlantic. Then I moved to the data side, and I eventually became Chief of Fisheries Statistics for the Southeast, and so I was dealing with South Atlantic, Gulf, and Caribbean issues and feeding information to stock assessment scientists, and so I worked cooperatively, both domestically with GulfFIN and ACCSP, as well as various Science Centers and Headquarters on both recreational and commercial statistics. Thank you very much, and I'm happy to join the SSC.

DR. BUCKEL: Thanks, Steve, and welcome to all three of you. I look forward to working with you. Another change to the SSC is that George Sedberry stepped down from the SSC, and we want to thank him for his many years of service to the SSC, as a member, a vice chair, and chair. We're sorely going to miss George and his life history, and fish biology expertise, and survey expertise, and, although Fred and I have already thanked him by email, we'll send a more formal letter to George from the SSC, thanking him for his years of service. All right, Judd. I think we're now ready to do voice recognition, and we can start with Jie, and we'll go around the room.

DR. CAO: Good morning, everyone, and so I'm Jie Cao from North Carolina State University.

MR. ADDIS: Good morning. Dustin Addis, Florida FWC, stock assessment.

DR. BUBLEY: Wally Bubley, South Carolina Department of Natural Resources.

DR. NESSLAGE: Genny Nesslage, Chesapeake Biological Lab.

DR. SCHUELLER: Amy Schueller, NOAA Fisheries.

DR. DUMAS: Chris Dumas, University of North Carolina Wilmington.

DR. SWEENEY-TOOKES: Jennifer Sweeney-Tookes, Georgia Southern University.

MS. PACKAGE-WARD: Christina Package-Ward, NOAA Fisheries, Southeast Regional Office.

MR. WALSH: Jason Walsh, North Carolina Division of Marine Fisheries.

DR. SCHARF: Fred Scharf, University of North Carolina Wilmington and Vice Chair of the SSC.

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

DR. CURTIS: Judd Curtis, South Atlantic Fishery Management Council staff.

DR. REICHERT: Marcel Reichert, SSC.

DR. FLOWERS: Jared Flowers, Georgia DNR.

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

DR. LORENZEN: Kai Lorenzen, University of Florida.

DR. BUCKEL: Okay. Now if we could do the online folks, and we'll start with Brian Cheuvront, please.

DR. CHEUVRONT: This is Brian Cheuvront, and I'm a retired Deputy Director of Management for the South Atlantic Council, and previously I had worked at the North Carolina Division of Marine Fisheries.

DR. BUCKEL: Thank you. Erik Williams.

DR. WILLIAMS: Erik Williams, Southeast Fisheries Science Center, and sorry that I can't be there in-person, folks.

DR. BUCKEL: Steve Turner. Steve, if you could just do a voice recognition for us.

DR. TURNER: Sorry about that. I'm not great with this button. Steve Turner, SSC.

DR. BUCKEL: Then Kevin Hunt.

DR. HUNT: Kevin Hunt, and I'm a human dimensions professor, and I do a lot of social and economic work on fishing, hunting, and trapping.

DR. BUCKEL: All right. I think that's everyone that's online, and is that correct, Judd? Chelsey Crandall. Chelsey, if you can hear us, if you can do a voice recognition for us, please.

DR. CRANDALL: Apologies. I got kicked-off and came back on. Chelsey Crandall, Florida Fish and Wildlife.

DR. BUCKEL: Thank you, and thanks, everyone. We've got some -- It looks like Carolyn is here, and thanks, Carolyn, and Shep Grimes. We appreciate you having representation from your groups. All right, and so I'm going to our first agenda item, which is Attachment 1a, which is our agenda, and are there any changes to the agenda that Judd or others have, or does anyone see any issues? Raise your hands if you do have -- All right. Seeing no hands, we'll consider the agenda is approved.

Then the meeting transcript from our September webinar is Attachment 1b, and does anyone have any edits to that transcript? Please raise your hand if you have any, either online or here in-person. All right. Seeing no hands raised, we will consider the meeting transcript from the September webinar approved. Judd, do you have any items that you want to cover before we go to public comment?

DR. CURTIS: No, I don't, Chair.

DR. BUCKEL: Okay, and so this is a time for general public comment on the overall agenda. If you have comments on a specific agenda item, you can save it for that item, but, if anyone from the public has a general comment about the agenda, please provide that now. Okay.

Seeing no hands there, we'll move on to our first agenda item, Number 3, which is Review of the MRIP-FES Pilot Study. We're going to receive a presentation from Dr. Richard Cody, but, before he starts, I just want to remind folks that we need you to take notes, to flesh-out the report from this meeting, and so you should have received an Excel file yesterday with assignments, and so the folks that are assigned to this item are Cao, Dumas, Lorenzen, Nesslage, Schueller, and Turner, and so if you folks could pay particular attention and take some notes to help with fleshing-out our response to the action items for Item Number 3. Is Richard online?

DR. CURTIS: Yes, and, Richard, if you're ready, I will make you a presenter.

REVIEW OF MRIP-FES PILOT STUDIES

DR. CODY: Okay. Thanks for, first of all, inviting me here for the opportunity to present a little bit on the FES pilot study report, but, also, I think part of the charge that I got was to give an update on the precision standard, and where that was as well, and so I will just kind of get into the two things, or three things, that Judd asked me to present on.

Essentially, there were three basic requests here, and the first was for an update on the change to cumulative reporting for estimates, instead of the two-month wave, and the second two things related to the FES pilot study report, and, in particular, the one-month fishing activity questions, one-month waves, and then, also, the question order changes to the twelve-month and two-month question order activity questions, and so those are the three things that I'm hoping to cover here today, and, in both cases, I will be providing some context. In terms of for the data standards, just basically why we are at this point, and why we developed them, and then, for the FES pilot studies, just giving you some context in terms of the work that went into the initial development of the FES questionnaire, and all of this is included in the report that's available on our website.

Just to give you some context for the data standards in particular, a couple of points here that I would make is that we started this back in 2020, and we have been implementing it over the past two-and-a-half to three years, at this point, and the goal of the survey data standards is to improve survey transparency, and this has been, I would say, a challenge for us, because, on one side, you want to be as transparent as you can in presenting data, or estimates, that you produce, but, at the same time, you want to assign a level of support for those estimates, and so the challenge is kind of coming up with a happy medium there, if there is such a thing, and so, as I mentioned, improving data transparency is one of the goals, and data quality, obviously, is part of that, and then the last part of it is standardizing data access across all the MRIP and MRIP-supported surveys.

In this case, we're not just talking about the federal surveys, and we're talking about regional and state surveys as well and setting up a set of standards for estimation, as well as data collection, that, you know, can be used as guidance at the regional level.

The current phase that we are in right now is this shift to cumulative estimates, and I will add here that we are taking comment, and we are taking input, from the SSCs, and from other entities, regarding the way we are presenting information currently on the website, and so I would -- You know, I wouldn't consider anything set in stone, per se, and that we're looking at better ways that we can present what we have, in terms of the data, and so I mentioned a little bit about the standards and what their intent was.

The drivers for it though are several, and one of the largest drivers was the White House Office of Management and Budget basically set up a directive to the statistical programs and agencies to come up with some standards for the publication and presentation of estimates used to inform decisions. Then the other part of this is aligning with other statistical programs and agencies, in terms of best practices, and so those are some of the drivers.

One of the goals here is to promote a more transparent process, where limitations are identified upfront, basically, in terms of the estimates, and then, also, another driver for this was the National Academies reports that basically recommended that we establish performance standards for our surveys.

There are seven standards in all, and the first five really pertain to the development and implementation of surveys, from the concept phase all the way to implementation and the review process that goes along with assigning a level of credibility to those surveys, and so those five standards -- I won't go into them in detail, but they cover things like transitioning from either one version of a survey to an improved version or from one survey to a different survey, and those are

outlined in the procedure and policy directives that we have available on our website here, and the link is shown in this slide.

The last two refer to process improvements, and the sixth one there, process improvements in general, that's covered by the regional implementation planning process that the states have, are involved in, and, generally, the Fishery Information Networks and ACCSP are the ones that develop those lists of priorities, in terms of data collection and improvements to surveys.

The last one, which is where we are right now, has to do with access and information management, and, you know, there are a number of different factors in this standard, but most notably is the adoption of a standard for a level -- To identify a level at which caution, or whether an estimate actually meets a given standard, and so this is -- This slide really is just outlining the process, and, as I mentioned, it's a phased process, and we're still taking input from external entities, but we did start this process, as I mentioned, back in 2020, and, over the past couple of years, we did a number of things to try and help with the process, such as do side-by-side comparisons and allow that for the query tool changes that we made from wave-level estimates to cumulative estimates.

We also published a data user handbook and made several presentations to the FINs and other entities, regional entities, as well as hosting a number of data user seminars to help with the transitioning process. Right now, what we've completed, in terms of just the cumulative, the presentation of cumulative data, is the shift from two-month waves to cumulative estimates, and we have received some feedback from data users, and some of it has been positive, and some of it not so positive, in that, you know, the way we present the data is not currently the same as it was in the past, and so it's more difficult to get to some estimates than it has been previously.

We did receive some input, or suggestions, on how to improve the presentation of data, and one of those is the new fishing year options that have been added, so that this, you know, hopefully will help to reduce the reliance on custom estimation, to look at different fishing year options, and, as I mentioned, we've done a number of presentations, and some of those have been recorded and are available online, for those that are interested, and then the plan is to continue working with data users, and I will get into a little bit of that later on.

The precision standard -- Basically, the intent of that standard is to identify a precision threshold for which the MRIP program itself supports estimates, and it doesn't affect public access to microdata, or survey respondent data, used to produce the estimates, and we do provide some tools that allow folks to do custom estimates, as they need to. For us, the estimates where the precision, or where the percent standard error, exceed 50, they're typically not statistically different from zero, and so that's the survey standard that we used for highly-imprecise estimates, and I will get into a little bit of the rationale behind that.

We had initially intended to mask the estimates, but, due to feedback from constituents and data users in general, we have delayed this, or possibly won't continue with it at this point, but we do flag estimates in favor of that, and so the precision standard -- What it does is it basically allows us to conform to OMB's requirement, and it does highlight gaps in the availability of sufficiently-precise estimates, and so that's one thing that it does draw attention to.

I think this is important, from our perspective in coming up with metrics to look at the survey performance and improvements, in terms of the survey overall precision levels for survey

estimates, and so, when we add samples, for instance, we can use this as a metric to show improvements in the precision level, the overall precision level, for the estimates, and so an intent for the precision standard is to provide a little bit more flexibility, to determine more appropriate methods for filling data gaps, rather than, you know, relying on highly-imprecise estimates and, you know, maybe some shaky assumptions regarding the reliability of estimates as well for their use.

We hope that this reduces the risk of using highly-imprecise estimates to inform fisheries management decisions, but, also, in the cases where it is used, I think it does draw attention that more explicitly than it has in the past, and then, again, as I mentioned, this does align us with standards of best practices for other statistical agencies.

A little bit here on how the precision standard was developed, and, as I mentioned, we've gone with a standard of 50 percent, which is probably -- Which is, I would say, a little bit more liberal than most of the other statistical agencies. We did receive collaborative feedback from our partners, who explored the effects of imprecise estimates in stock assessment results, and namely a study that was administered by ACCSP, with MRIP funds, that looked at the performance of assessment scenarios, and I'm sorry that I don't have the details on which models were looked at at this point, but the determination was made there that assessments, at least for the ones that were looked at in this study, could get by with PSEs of 40 percent, with estimates for PSEs of 40 percent. That's not ideal, but they were fairly robust to that level of uncertainty.

The U.S. Census Bureau doesn't provide estimates with PSEs above 30 percent, and they do have guidance in their data user manual for what they will support and how to reference the use of estimates if they don't conform to that 30 percent PSE guidance, and so there is some explicit language, that are basically disclaimers, that the Census Bureau insists on for the use of estimates above -- With a PSE above 30 percent, and, as I mentioned, the ACCSP study, with the assessment PSE of 40 percent -- The program itself continues to set a goal of achieving a PSE below 30 percent.

Then, in 2019, prior to implementation, we did solicit feedback from partners on the standards, through leveraging our partnerships with the FINs and the commissions, and so we did receive some input back then, but I think the challenge with this type of a change is that you don't really get an understanding for how it will be received until it is actually received, and so a lot of the work that you do ahead of time I think doesn't resonate until, you know, the rubber hits the road, so to speak, and the estimate changes are in full view.

Just to give you a sense of what the data, what the estimates, look like currently on the website, we've gone to a cumulative presentation of the estimates, and there are four fields, or four new fields, that are presented with the data, and we did have some discussion regarding the addition of other fields as well, and we went with this version largely because, you know, you would have to scroll across the screen to get to -- To see all of these different new columns, but, essentially, what we have here is we have four new columns.

The first one asks the question of does it meet the MRIP standard, which is 50 percent PSE, and that's either yes or no, and a caution is issued for estimates that fall between the 30 and 50 percent PSE range, and you can see the red here indicates that it doesn't meet the precision threshold, and, just to kind of drive home the point as well, we ask if the total catch estimate differs significantly

from zero, and that's either yes or no, of course, and, if it doesn't meet the threshold, then, obviously, that's going to be a no, and then, if you go over to the far-right column, that basically represents the upper and lower 95 percent confidence limits, and so, obviously, if it's 50 percent PSE, you're hitting zero, or below, for the estimate.

We've had some input from folks that have concerns that presenting it this way gives the impression that zero is a likely estimate for that, for a given domain, where the PSEs are above 50 percent, and I think maybe some additional language will be needed to kind of clear up that point, although the real intent of this is really to show that, when you have a PSE of 50 percent, you know, you have a range, or you have a confidence limit, that includes zero.

A little bit more about how data are presented, and, if you get on the website right now, the cumulative estimates are presented through the most current wave, and, in this case, it's Wave 3, and this is based on a calendar year presentation, and so you have essentially a sum of estimates throughout the year, and we have had some feedback on, well, this doesn't appear to be very transparent, because you just presented information in the previous wave, and now it's gone from the website, that you've basically hidden it within the cumulative estimate that includes more waves, and so we're getting some advice on that, how to perhaps better present that information, but you can see, again, the flagging of the estimates.

If you go to the query tool, you will notice that there are some differences, most notably in the pull-down menu for the fishing year, and there is a selection of different fishing year options that are available, and so you can do the regular calendar year, a standard annual output for MRIP estimates, or you can do a March, May, July, September, or November fishing year, and the rest of the options are similar to what they have been in the past.

Again, this is just showing the change from wave-level estimates to cumulative estimates, and they're available on the same timeframe, or the same schedule, but, again, you're not getting that individual wave-level estimate once you pass Wave 1, and they're combined throughout the rest of the year.

Some questions we've received are, you know, why are we producing estimates cumulatively, and the simple answer is to make better use of our data, and aggregating data cumulatively throughout the year allows us to build the sample and improve precision, so that we minimize the amount of estimates that are flagged as we proceed through the year, and, also, it does add a bit more credibility to those estimates, because they have an increased likelihood of being more representative as more sample is added.

I mentioned a little bit about the new fishing year options, and, as I said, this was based on recommendations that we have from data users to add different fishing year options, and this gives you a sense of some of the options available currently, and so the key take-aways here are the estimates a provided cumulatively, by wave, every two months. We are looking at ways to improve the way we present data, but, for now, on the website, if you go there, the estimates are presented cumulatively, and so, once you pass Wave 1, estimates are summed for the additional waves of the year.

We flag estimates with PSEs above 30 percent, and these are flagged, and the ones that don't meet the precision standard are identified, and also flagged, and there is some additional warning

language in there that we didn't have in our previous version of the query tool. The microdata remain available, and so custom domain estimates are possible, and we do -- We are working with partners to support their data needs, and so, you know, we have received requests for custom-level domain estimates, and we're trying to work with partners to make sure that, you know, we don't -- That we do all we can to help them get to where they need to get.

The last thing I will point out, as well, is that the change that we've made doesn't impact the interpretation of custom domain estimates. Those will still rely on analytical justifications and assumptions about the data, outside of the survey design constraints, and it's worth pointing out that, oftentimes, assessment folks are using additional information to inform those decisions and to, you know, increase the reliability of assumptions that are made with the use of the data.

Our next steps are, basically, I would point to some work that we've started with the Southeast Science Center, and it basically is a continuation of the work that we started with the rare-event species a while back, and we did have some input from MRIP consultants on different methods that could be used to improve the usability of data to develop estimates, and so we're working now with the Southeast Science Center to come up with a decision framework for handling highly imprecise estimates of stock assessments, and part of that work includes an examination of different methods for aggregation, whether that's, you know, multiyear averaging or different other methods that we can use.

A couple of options are to look at small-area estimation techniques involving the use of auxiliary datasets, or ancillary datasets, to inform weights used for samples, and so those are just a couple of the different things that we're looking, and we had an initial meeting back in July, and we looked at Southeast assessments impacted by the estimates, and then, basically, there are a number of things that we would like to look at over the next year or so and develop sort of a prioritization of different types of analysis and statistics for review in a follow-up workshop, and I'm happy to say that we've scheduled that second workshop, which will be sometime in the next month or so. I will leave that there, and that was probably too much information on the cumulative estimation, but I don't know, Jeff, if this is the time to take questions on that component or if I should just go into the FES testing and the information that was included in the report.

DR. BUCKEL: I think, given the difference, let's go ahead and take questions on the first part of your presentation, and then we can move into the FES testing portion of your presentation, and so do folks have questions for Richard on the first portion of his talk, on the cumulative estimates and the new way the data is served up? Alexei.

DR. SHAROV: Good morning, and thank you for the presentation. I have a question about the decision to report only cumulative estimates and drop the wave estimates that were traditionally available on the query website, and the calculations are still being continued using a two-month interval, and so a wave, and so, essentially, it's the random stratified survey, and so, essentially, it's an estimate for a stratum, or a strata, that when you choose to look at an estimate of a particular species, for a particular wave.

I understand that there were some abuses of the data that were provided by some stakeholders, and that is that they were trying to grab the data for a particular wave and interpret it in the way that they see it, but, nonetheless, we have to face the fact that the requirements of fisheries management, in many cases, do force us to consider seasonal dynamics. For many species, catch in a particular

wave, or waves, makes most of the annual catch, and, therefore, those estimates, for those particular waves, might be most precise, and then so there are a number of reasons for people to want to use the wave-based estimates.

I know that you do provide an option for people to do this on their own, but they certainly will have to have additional skills to be able to do that, but, given what I said, I wonder if you considered the fact that, in many cases, the wave-specific estimates, you know, are justified, and would be needed, and so did you hear any arguments in favor of this, and did people report to you that they wanted to keep the wave estimates and have them easily accessed, the estimates? Thank you.

DR. CODY: Alexei, thanks for those comments and the question. Yes, we did. We did receive that very input that you're talking about, and I think that's what we're grappling with right now. When we first started the implementation of the standards, I mean, the drivers were pretty clear, you know, the White House OMB and then conforming to the best practices that other surveys conform to, but you mentioned -- I mean, one of the differences is that we're using -- The constraints for the use of the data, or I should say the demands for the use on our estimates, are a little different than they are for some of the other surveys, and some of the estimates that they produce, and so I think we are taking into consideration input that we've received regarding the presentation of estimates at the wave level, and there's no doubt that some of the estimates that are currently being rolled up, I will call it, in the cumulative presentation would meet the standard.

The dilemma, for us, is how do we develop a query tool that does that in a manner that, you know, still gets across the point that we're trying to achieve a certain standard for the presentation of data, but doesn't unduly censor data that would have been available and does meet the standard, and so we are taking those things into consideration, and, as I said, this is a dynamic process. When we first started out on this, the goal was to -- You know, I wouldn't say force a change in the way we're using the data, but try to draw attention to other options that might be available for the use of data, given that we have to assign a standard to the estimates that we produce that indicate whether we support them or not, and so the challenge there is coming up with something that is not too -- That is agreeable to most data users, and, you know, still makes an attempt to achieve the standards that we're trying to achieve.

As I mentioned too, one of the things that concerned us is that we needed a metric that shows, you know, where the improvements need to be made with the survey, in terms of estimation, and, you know, this standard, adoption of the standard, did help us, in that respect, but, as I said, we are taking feedback, and we haven't 100 percent settled on a -- You know, a final format for the presentation of estimates on the website, but, you know, that decision will be made by my leadership, but I would say that, you know, we're not losing sight of what your concerns are, and we are trying to take those into consideration. I know I kind of beat around the bush there, but hopefully --

DR. BUCKEL: Next I have Marcel.

DR. REICHERT: Thank you. You may have addressed this, and you mentioned that efforts to develop methods for rare-event species are still being developed. Currently, for these less-common species, how are zero values displayed in this new presentation system? You just mentioned that that new system is also still being developed, and, in other words, are they considered highly precise or flagged otherwise?

DR. CODY: Are you talking about the presentation of rare-event species information that we're currently working on or --

DR. REICHERT: Your audio is going in and out, and so sometimes it's a little difficult to hear you, but, in your examples, you list black sea bass, but, if there are species where there is no catches in a period, how are they -- How are displayed? Are they still considered highly precise, or are they flagged in another way? Do you know what I'm trying to ask?

DR. CODY: Yes, I think so, and so what you're saying, or at least the way I'm interpreting it, is that, for species with zero catch in a given wave, how do we present that information, because that's important information, obviously, also, and, just because there is an estimate, or there isn't an estimate, it doesn't mean that's not an accurate representation of the catch for that wave, and is that gist of it?

DR. REICHERT: Yes.

DR. CODY: Well, currently, you know, basically, we're not masking anything on the website, when it comes to cumulative estimates. The intent, originally, was to mask those estimates, but, right now, if you say go to the query tool, and you pull up a species that infrequently encountered, it will give you what's available for up to the current wave, and so, if there was a zero on a previous wave, you wouldn't see that, and that speaks to the point, I think, that Alexei made regarding, you know, the loss of information, in terms of seasonality of fisheries, and so that's something that, you know, I can take back as input and try to address.

DR. REICHERT: Thank you.

DR. BUCKEL: Kai.

DR. LORENZEN: I sort of wanted to add my voice to those people who apparently have expressed some concerns about the use of that 50 percent PSE criteria, and the quality criteria, and I understand the statistical reasoning behind it, but I think one has to put that into context of fishery management and what we use the data for, and we never ask the question of are the catches in this fishery different from zero at the 95 percent confidence level, for good reason, and, also, you know why 95 percent?

It could be 90 percent, and maybe we're fine, and so I just don't think that -- You know, I'm not against somehow expressing that, you know, this is a fairly precise estimate, or this is less precise, or have like a color-coding that you have, but I am concerned about this argument that we should essentially flag those values with over 50 percent PSE as values that we should not use, and so also because, actually, you know, those confidence limits may include zero, somewhere near the edge, but they do not, in any shape or form, suggest that there are no catches, and, really, the evidence is there are probably quite high catches, and we're just not -- So I'm kind of concerned about partly the reasoning for it.

I can see that this didn't come from NOAA, but this comes out of -- My understanding is it comes out of the OMB, but I think we should evaluate whether that is a criterion that should be applied like this, in this case. Thanks.

DR. CODY: Thanks, Kai. That's important input, and, you know, that's one of the things that we have struggled with, is sort of conforming to, you know, an overall directive, we'll say, to come up with a precision standard for which estimates would be supported, and I think, you know, there is a lot of caveats, as you pointed out, and differences, to the way the estimates are used in a fisheries setting, that may be different than some of the other surveys. You know, as I said, this is basically a data-gathering exercise for me, and I'm hoping to get some input from the SSCs on, you know, their concerns, and how we can better address them, basically.

DR. LORENZEN: Yes, and this is just an additional -- Obviously, the concern that I have is that we may get into a situation where we have people saying, well, you shouldn't use these data, because they don't conform to the quality standards, but we may have stocks where it will never be possible to get data that really correspond to those quality standards, and, also, we are not using these data point-by-point, right, and we're using long time series of these data, and so on, and this question, I think, is -- It's asking the wrong question, and it might get us into trouble, if we keep harping on that particular criteria. Thank you.

DR. CODY: Thank you.

DR. BUCKEL: Okay. Next up, I have Steve Turner.

DR. TURNER: Thank you, and it's been covered.

DR. BUCKEL: Thanks, Steve. Next up is Kevin Hunt.

MR. HUNT: Thank you. I have dabbled a little in the meta-analysis, and, basically, you know, any weighted estimate is unbiased, but the least unbiased estimate has the smallest possible variable around the mean, and that's what it looks like we're seeking here, but, to combine studies in the meta-analyses, you weight by the inverse of the variance due to sampling error, which includes these poorer studies, but they're devalued considerably in the overall weighted mean, and so how are you guys specifically weighting -- You had mentioned you're using some studies to inform the weights, and are these under -- Are these -- Like the ones that are flagged, are they totally kicked out of the analysis, or are you doing it with and without, and how is that weighting happening?

DR. CODY: Are you talking -- Are you referring to the current work that we're doing with the Southeast Center related to --

DR. HUNT: I am not too familiar with that, but I'm just talking about the cumulative estimates, and how are you weighting the --

DR. CODY: Okay. Well, they are summed across the waves, and so the weights are basically the same weights that are used for each of the wave-level estimates, and so, once we arrive at the final wave-level estimates, and the weighting for that, then that's what we stick with. There is some adjustments that we have to make. Basically, the way we put information in the tables for the query tool means that there's a little bit of a misalignment between the final variances estimates that we produce versus what we get at the wave level, and so we are looking at ways to try and improve the way we are currently calculating, or estimating, that variance, and so that probably

doesn't tell you what we're using to come up with the final weights, but I will say that, for -- You know, it's a combination of different datasets.

We look at demographic information for respondents initially, and, you know, try to align the respondent pool, we'll say, with what we initially put forward as a -- You know, as a sample, and so that's essentially, you know, how we do it. We have documentation on the weighting process itself in our data user manual, and so that gives you a better -- That will give you a better sense of how it's done, because, you know, I'm conflating here two different surveys that are combined really to produce a product, which is the final estimate, and so I would point you to that, probably, for a bit more detailed information.

DR. HUNT: Thank you. I will check that out.

DR. CODY: But just to mention some of the stuff with the Southeast Center, and we just started this, and so, as far as the small-area estimation is concerned, what we're looking at is a regulatory dataset that we're hoping that we can put in a format where we can adjust weights to take into consideration perhaps, you know, more refined information on a geographic scale, or a temporal scale, that will help us come up with a more meaningful final weight for some of the estimates, but we're in the early stages of development of that, but there is quite a -- There is quite a bit of literature that's coming online now that looks at, you know, doubly robust estimation, where you combine two different methods, essentially, to come up with a final estimate, and you get the benefits of basically doing something twice to come up with an answer, and so there's some movement towards more efficient processes that make better use of their data, and make better use of auxiliary datasets as well, but, like I said, we're trying to do that in our spare time, while we're not making estimates with our own surveys.

DR. BUCKEL: Thanks, Richard. I am not seeing any other hands in the room or online, and so, Richard, if you're okay, we'll -- Sorry. We've got Chris Dumas.

DR. DUMAS: Hi, Richard. I've got a quick question for folks here in general, and then for Richard. When we're looking at these estimates, is our goal to look at trying to estimate what the cumulative catch is at the end of the current wave, or is our goal to estimate what the cumulative catch will be at the end of the season, for the purpose of, you know, is it likely to exceed the ACL, or something like that? Then, depending on what our goal is, which of those two things is the goal, then what are these cumulative estimates trying to estimate? Are they trying to estimate the catch, the cumulative catch, at the end of the most recent wave, or are they sort of overlooking and trying to use all the cumulative data, up to the most recent wave, for the purpose of trying to estimate what the total catch will be at the end of the season?

The reason why I ask that question is, if we're trying to estimate what the cumulative catch will be at the end of the season, then there might be a difference between fisheries, in terms of is a lot of your catch coming in an early wave, or is a lot of your catch coming in a later wave, as you move through the season, and, if you're trying to estimate what the catch will be at the end of the season, then, if you only have a small amount of catch in each of the early waves, then, even though you might have a good estimate, a very precise estimate, of what the cumulative catch is up to that point in the season, it might provide very little information on what the cumulative catch will be at the end of the season, if a lot of the catch normally occurs in later waves, but, on the other hand, if you have a fishery where a lot of the catch occurs in the early waves, then that estimate of the

cumulative catch, sort of midway through the season, would be a pretty good indicator of what's going to happen by the end of the season, because you've already had most of the catch occur for that fishery. Does that make sense?

DR. CODY: It does make sense.

DR. DUMAS: So, Richard, my question would be are you trying to estimate cumulative catch at the point in time of the end of the most recent wave, or are you trying to estimate what the cumulative catch will be at the end of the season? That's the short question. Thanks.

DR. CODY: I would say it's a little bit of both, but, the way things are presented right now on the website, it's that it's cumulative through the most current wave, and so, like you said, that doesn't give you a sense of any seasonal trend there, other than, you know, if you look at a cumulative distribution, maybe it might tell you the trajectory for that catch, or tell you a little bit about it, and I think part of what you were referring to was some of the impetus for the recommendation that we got to present things as in different fishing years.

So, for instance, you now can go to the website, and you can start a fishing year or March, or May, you know, throughout the year, and move it along one wave, but I do appreciate the comment that, you know, how the cumulative estimates will be interpreted, I guess, or their presentation is impacted by, you know, when the actual -- When most of the fishery is prosecuted, and so I think that's good feedback, for us to perhaps look at that.

DR. DUMAS: Right, and I think it's good that these cumulative estimates are being produced. I think that's a good thing, and it's definitely a step forward. It's just that, depending on the fishery, and how the catch is distributed across the season, those cumulative estimates, at any point in time, may be more or less informative, depending on the fishery, as to what the total cumulative catch will be at the end of the season.

DR. CODY: Yes.

DR. DUMAS: A separate question is, as you're going through estimating your cumulative -- Making your cumulative estimates by wave, you're making use of the data that was collected in previous waves, and the most recent wave together, to make your cumulative estimate, and are you also making use of the catch that would occur for the same species in the same waves in different states, and so are you accounting for correlations in catch across states, especially correlations in the errors, and sort of are you producing estimates -- Are you estimating the estimate for each state as a system, and so, if you've got a -- You know, if you're estimating each state separately, if you estimate them as a system, and take into account correlations in errors across the states, if those correlations and errors are significant, then you might be able to get better precision on your estimates for each of the individual state estimates, and so are you looking at patterns between the states at a given point in time and producing the estimates for a given species?

DR. CODY: We aren't looking at that, and these are basically just design-based estimates, and so, you know, state is one of the strata that's used in the design, and so, you know, you can get estimates at the state level, and, currently, because we're not masking estimates, at least in the cumulative sense, you know, those are available at the state level, as they have been in the past.

Now, we haven't looked at correlations between, you know, different states and what have you, and there may be some things that we could look at.

DR. DUMAS: Yes, and that's a question for going forward, but thank you.

DR. BUCKEL: Okay. Thanks, everyone, for the great questions. There are no hands raised here or online, and, Richard, just one more comment for me is I agree with Alexei that it would be -- You asked for feedback, and it would be nice to have those wave-specific estimates provided on the website, and maybe you have, you know, a caution pop-up for when you click on that, that says, you know, these are the issues that you've mentioned of why you aren't serving those up, but, once you read that cautionary statement, you can get to those wave-specific estimates, and that's a personal comment from me, and so let's -- Richard, we'll go ahead and move into the second portion of your presentation, if you're ready.

DR. CODY: Sure. Yes, I'm ready. You can still see my screen?

DR. BUCKEL: Yes.

DR. CODY: All right, and so the second portion really has to do with the survey report, and there were two asks that I got from Judd related to the month-level estimates, and how we arrived at our decision to go forward with that, and also the question order and some additional information in that respect.

One thing I will point out is that, you know, we have developed a program that, you know, as we have the funds available, we try to continue researching improvements to the surveys, and, you know, there were certain recommendations from the National Academies that we have addressed, and are in the process of addressing, that fall into the category of, you know, looking at sources of bias in the current surveys, and so this is something that we have been doing for several years, and a lot of the studies really don't garner as much attention as this one, and, you know, the reason for, obviously, the amount of attention this one received is the potential for changing the estimates yet again.

We do acknowledge that, you know, when you make changes to a survey, it's an incredibly disrupting process, and we have put some attention towards trying to, you know, decrease the amount of disruptions that we try to -- You know, that happen with this kind of a program, that basically you're looking at making improvements as part of your normal administration of the survey.

We've done a number of pilot studies, that have either been completed or planned, and you can get a list of these, or reports of these, on our website that is listed here, and the focus has been mostly on non-sampling error, and, in that respect, obviously, systematic non-sampling is kind of an oxymoron there, but, anyway, the focus has been on non-sampling, and we've done studies related to non-response, and non-response follow-ups, and measurement error in particular, as is the case with the question-order study, and then we've done other pilot studies related to, you know, interviewer effects on surveys and adjustments for coverage that are employed by different surveys. These are just some of the areas that we've looked at.

As far as measurement error is concerned, I mean, the report itself describes two studies, but it does provide you some background with how we arrived with the Fishing Effort Survey in the first place, and so the questionnaire development for that survey, followed by the study on one-month waves and the question-order effects, and so, for the initial development of the Fishing Effort Survey, we did quite a bit of testing over the period of, I would say, you know, six or so years, and we tested several different questionnaire versions that differed in the numbers of reference periods, and shown here is an example of that.

You have a single two-month period, and I will call it unbounded, because there is no other reference period in the question, and so it just looks at, in the past two months, the numbers of trips that you made for shore and boat mode, and so that's the first diagram here on the left, in the blue, and then, the second one you see, there are a number of different reference periods, starting with the most recent and then going back in time, so that periods are covered for a twelve-month period, essentially, and the first two are wave-level, and then the last two are four-month periods, combining two waves, and so those are some of the surveys that we look at.

We arrived at these different survey designs through cognitive interviews, as well as, you know, looking at information needs, and so we tested some of these with a pool, or a panel, of anglers, to get a sense of how they fill them out, their rationale for answering questions certain ways, and any frustrations they had with maybe the question order or the question design, and so these are some of the factors that led us to the current design that we have.

In the case here, just some of the results, and you will notice here that, you know, for this pilot study, you're looking at just four different states: Florida, Massachusetts, New York, and North Carolina. The take-home here is that the bounded design resulted in lower prevalence estimates, and that's the percentage of households that report fishing activity in most of the comparisons, right, and it's probably not accurate to call this nine out of ten comparisons, because you're looking at overall, which combines the different states, but, essentially, here, what you have is that you have lower prevalence for bounded designs than you do for unbounded, and this generally results in lower estimates of catch as well.

Again, you know, some of these differences here that are shown in this table don't result in significant differences, but the general trend is consistent with the finding that bounded designs result in lower prevalence, and so, just to give you some of a sense of some of the comparisons that we were able to make and how the data were collected that allow this to compare between estimates for a given wave, we'll say, and the order in which they were presented, and so the bounded design was implemented for several successive waves, and you can see here that it was started basically in 2013, at the end of Wave 4, and proceeded until Wave 4 of 2014, and so essentially a year.

It provided independent estimates for fixed reference periods, and so you have essentially data that are collected for different reference periods for each of the data collection periods, and the data collection periods here are noted in the crosshatch on the diagram, and so, for instance, for the first round of data collection, the emphasis is on the most current wave, which was Wave 3, and Wave 2 then is less-proximate, and then you have the previous periods that the information is asked about as well, and so this rolls along for the six different data collection periods throughout the year, or seven, I should say, and that gives us, you know, plenty of opportunities to collect data.

These different periods vary in recall length and question order, and this is the mode, the presentation of the mode, and the question order for the analysis. The collective effect of recall lengths and question order on the estimates were examined, and so it's important to note that it's collective effect, and, obviously, these two things are confounded somewhat by being presented in the same study.

I don't want to make too much out of this presentation of the data here, but, from the studies, looking at the states that we looked at, Florida, Massachusetts, New York, and North Carolina, and the limited periods of duration that we did look at, estimates are generally larger when the recall period is shorter and the reference period is presented first in the question sequence, and so, the more proximate months, if they're asked first, tend to produce larger estimates, and, obviously, you know, in looking at the data here, there is a general trend towards a positive relative difference, but that's not the case for all the comparisons here, and, you know, this kind of speaks to Chris's point about, you know, some effects may be exhibited by certain states that might be correlated with other states, and, in this case here, there is -- You know, it's inescapable that, you know, you're talking about the busier waves of the year for the negative relative differences, in most cases, but, in general, there is more of a trend towards a positive difference here.

Basically, it indicates that, you know, for estimates that -- Where you have a shorter recall period, estimates tend to be larger, and especially when that reference period is presented first in the question, and so the questionnaire development key points are bounding of the desired reference period against other time periods resulted in lower estimates than the unbounded design, and so having some reference period that anglers can compare usually results in lower estimates, and so this could indicate that, you know, an unbounded design has a tendency to be more susceptible to telescoping of trips from previous reference periods to the current reference period.

Estimates were higher when the length of the recall period was shorter and when the reference period was presented first in the question sequence, which I just talked about in the last slide, and so a couple of points here is that, you know, forgetting trips, omission error, versus reporting trips at the first opportunity, telescoping error -- We can't really disentangle those two, the impact of either, based on this study.

Then cognitive interviews suggested that the anglers want to be identified as such, and they're eager to report fishing activity. One of the things that we did find, in the cognitive interviewing process, is that anglers did express a sense of frustration when they couldn't report on their fishing trips, and so that might impact their -- You know, the way they fill out the forms, thinking that the trip information is more important than perhaps the accuracy, and so, as I said, there's a general desire that they want to report those trips.

Then the questionnaire testing and angler feedback resulted in the current FES questionnaire, and that included a two-month recall, followed by a twelve-month bounding period, and so we acknowledge the results of the previous studies, and that bounding period did appear to reduce the estimates, and perhaps reduced telescoping as well, when presented alongside the question, and so that kind of gets us to the rationale for changing the order of the questions.

You know, we did not put too much attention towards the order of the questions initially, because this is a mail survey, and the questions -- The feedback we got was that, you know, the questions are presented side-by-side, so anglers can see all the questions before they answer them, but

apparently, you know, that still has an impact on how they answer the questions. Which question is asked first does have an impact, and, you know, the feedback that we got, from consultants, is that the method -- A standard practice, at least, is to present the easier question first, and so the easier question would be the shorter time period, the more proximate time period, where it's less likely to be influenced by recall bias, and so asking the two-month question first essentially is a tactic that is used to improve response rates and to reduce non-response bias, and the -- I guess the philosophy there is that, you know, once you get a person into a shop, they might buy something, and so, once you get somebody invested in answering a question, or part of a survey, they will continue on with the survey, or are more likely to.

That was basically how we arrived at the current FES design, and so I will talk a little bit about the one-month wave questionnaires, and how we tested those, and so, essentially, we tested questionnaires with shorter reference periods, and the questionnaires differed in the presentation of those reference periods, and, in other words, just looking at different ways of presenting the different combinations, or treatments, for the presentation of that information, and then additional evaluation of question order and recall period length was undertaken as well as part of that, and so, in this diagram here, you can see the FES standard questionnaire, and that asks about shore and private boat trips, and it asks about the number of days in the previous wave that they went fishing, and then also the number of days in the previous year, including that last wave.

That's the way the question is asked in the current design, and so, in looking at one-month waves, we looked at two different versions of the -- Or two different treatments, and so, in the first here, you will see Treatment 1, and that's the middle diagram. The questions are basically asking about the number of shore days in the least-proximate month and then the number of shore days in the most recent month, and so it asks about two different months in a wave separately, and so you get information for two different months in one treatment. In the Treatment 2, we only ask about one-month, and so we ask about the most recent month, and so, in this case, it's July, versus the Treatment 1, which asks about June and July separately, and those are indicated here and underlined, the differences between the different survey designs.

In a comparison of these different one-month wave questionnaires with the FES, and, here, we have the two treatments basically side-by-side with the FES, and Treatment 1, just a reminder, is the one-month wave bounded by the prior month, and then Treatment 2 is the one-month wave with no bounds, and then the FES is two-month waves, and that's bounded by the previous year.

In this case here, the results kind of will indicate that the FES estimates were actually lower than the one-month wave by itself estimates, and were more in line with the Treatment 1 estimates, and those were also systematically lower than the one-month wave solo treatment, and so, essentially, here, what you have is greater alignment between the bounded one-month wave treatment and the FES than you have with the unbounded design one-month waves, versus the FES or the bounded design.

One thing I will point out too is that, again, you know, we're -- Just to emphasize the limitations of the study, we're dealing with four states here, and, in this case, what we've done is combine Georgia, Massachusetts, and Maine into one -- On one side, and then we have Florida on the other side, because prevalence is much higher in Florida, as you would expect when you have year-round fishing, as opposed to the other states, and so those were combined there.

The one-month wave questionnaire, again -- The study was implemented for several successive months, and it provided independent estimates for a fixed month, and, in the case of the treatment where we ask about the one-month waves separately, but ask about two different months, you can see, in this diagram below here, that, in the initial data collection period, we have -- We're asking about June and July, we'll say, and, in the second data collection period, we're asking about July and August, and so July is collected in two different periods, and this continues throughout the year, and so there's an opportunity there to compare the -- When one month is presented first, versus when it's presented second in the order, and so that's the rationale behind this design.

It provided independent estimates for a fixed month, and the reference periods were presented in chronological order, and so, in other words, the least-proximate month was presented first, and then the more recent month was presented second, and this allowed us to evaluate the effects of recall length on question order as well on the estimates.

This is a summary of the results here, and, overall, there is a significant difference here. The longer recall period, when it's presented first, resulted in larger estimates, and so what this means is that, when you have -- When you try to account -- When you try to present, or ask questions, about a certain month, the longer the recall period, the larger the estimate, and so there's probably an indication there that telescoping is impacting that result.

The question order is the primary effect, rather than the length of the recall period, and so whether the month is presented first or second impacts the results that we see, more so than the recall period, so to speak, and so, in this case here, you can see Month 1 compared to Month 2, and that there is a difference here in prevalence for both modes overall for the periods that data were collected. This suggests that telescoping is the predominant form of error in the current FES, and so, in other words, anglers tend to bring in trips from outside the reference period when reporting, and so just some key points about the results of that study.

Bounding reduces the estimates, and is likely more effective at reducing telescoping error when bounding questions precede the reference period, and so, in other words, if you ask about the bounding question first, and then the reference period, you tend to have lower estimates overall, and that supports, or suggests, that telescoping is currently impacted by question order, more so than the recall period.

The two-month FES reference period may mitigate some telescoping error, relative to shorter reference periods, and so we tend to have higher estimates for shorter reference periods, which may indicate that, for two-month periods, you have less of an effect. For a larger reference period, you have less of an effect of telescoping, but, nevertheless, it still is an impact, most likely, on the overall estimates, and then estimates were higher when the recall period was longer and the reference period was presented first in the question order, and so that suggests that question order has a greater effect than the actual recall length, in terms of the impact of the overall magnitude of the estimates, and telescoping error, as I mentioned, is likely to be the predominant source of measurement error, rather than omission error, although there is indications, from the presentation of the Florida estimates, that, where you have a large number of trips that are being reported, prevalence might be affected, or not prevalence, but the numbers of trips may be impacted negatively, and so, in other words, omission may be more of a factor where you have states that have busier fishing seasons, or do have busier fishing seasons.

Question order effects we looked at in a separate study, and these were -- Both of these were done in sequence, and not at the same time, but the question order effects -- We looked at four different treatments, including the current FES question order survey design, and so, in the far-left column, you see the FES design, which presents that, when asked questions about shore first, followed by private rental boats, and it asks about the two-month period, reference period, first and then the twelve-month reference period second.

What we did is we looked at different combinations, varying the order of mode and the order of the reference period, and so Treatment 1 here shows that we continue with shore being first and private boat being second, but we reverse the order of the reference period, and so we ask about the twelve-month period first and the two-month period second that we're interested in. For Treatment 2, we reverse the order of the mode, and so private boat is first, and we go with a two-month period first, and then twelve months, and then Treatment 3 is the same order of mode, but we reverse the order of the reference periods, and so those are the four treatments that were compared.

I think, in the survey report, it does indicate some of the sample sizes that were used for that study, and so, just looking at question order effects here, the take-home here is that the estimates were highest for the mode that was presented first and when the two-month question was preceded by the twelve-month question, and so, whatever mode was presented first tended to have higher estimates, and this was more pronounced when the two-month question was preceded by the twelve-month question, and so the bounding question, asking about the previous twelve months of fishing activity first, resulted in, you know, a difference there, and so, within the two-month and twelve-month order, estimates were significantly lower when the mode was presented second, and so, when you stuck with the two-month and twelve-month order, you ended up with whatever mode was presented second at lower estimates than if it was presented first.

Then mode order was not significant when the twelve-month question preceded the two-month question, and so, in other words, question order really was more important than mode in contributing to the differences that we saw in the estimates, and so just to summarize, again, the values that you got were impacted by whichever mode comes first, but also were more so impacted by question order than mode order, and so some key points here.

The order of the two-month or twelve-month question has a stronger effect than the mode order. Presenting the twelve-month question prior to the two-month question resulted in lower estimates, and then asking the twelve-month question before the two-month question appears to reduce telescoping error, as evidenced by lower estimates overall, and this results in more accurate estimates than the current FES design, and I think I have a slide that references some of the reason we believe that's the case.

Overall, the key points is that, you know, telescoping error is likely the predominant form of error in the FES, and so, as mentioned from the cognitive interviews that we did, anglers want to report their fishing activity, and they are frustrated when they can't provide information that they think we need, or we want, and bounding is likely to reduce telescoping error, and so presenting a reference period that can be gauged against the current reference period is important in providing some sort of a calibration, let's say, for the reference period that you're interested in, and the order in which those are presented impacts the overall estimate, and so, if you present that -- If you present the bounding information first, it does result in lower estimates, and so we think that

implementing this change to the current questionnaire design will result in lower and more accurate estimates.

You know, why do we think they're more accurate? I mentioned a little bit about the fact that anglers want to report their fishing activity, but the approach is consistent with studies examining measurement error for other data collection modes as well, and so one thing I will point out is that we do see fewer illogical responses when we reverse the order, and so, when you ask the twelve-month question first, and the two-month question second, it tends to reduce the inconsistencies between the answers that we receive for those two questions, and so, in other words, you're less likely to see a response that results in a larger value for the two-month period than we are for the twelve-month period.

The big question that we've been asked, over and over, is why didn't we implement this questionnaire in the first place, and it seemed like there were some queues from the previous studies that indicated that, you know, it might be better to present the -- To bound with a reference period second, than the way it's currently presented, and I will point back to the rationale that's used, in many cases, for survey studies to improve response rates, and maximize response rates overall, and that is to present the easier question first, to draw-in the survey respondent and get them vested in the survey.

This is a standard practice, although I've seen a number of different studies recently that are critical, somewhat, of this practice, because, in many cases, it involves optimizing surveys that existed in one format previously, and have been adapted to improve response rates, without looking into some of the drivers for why those response rates might be improved and whether the information that's being received with this change is compatible with the information that was previously received.

We used cognitive interviews to inform the process, and we didn't get the sense, from anglers, that there was any real confusion over the twelve-month period and the two-month period, whether the two-month period was included in the twelve-month period or not, and we didn't get the sense, from the interviews that were conducted, that that was the case, but there were some indications that, because anglers want to report the information -- In a controlled setting, obviously, they don't do that, but they did express some frustration that they weren't able to do that, and so the design was informed by survey methodologies, and peer-reviewed by the National Academies and other statistical associations, and so, you know, there's quite a bit of review that went into the FES, and, you know, we haven't tried to just settle on the design.

We have continued to look at potential improvements that we can make to the surveys, and part of that is, you know, from our previous experience with the Coastal Household Telephone Survey, where, you know, we didn't do, I think, an adequate level of monitoring, and the response rates decreased over time, particularly in the more recent years, and that corresponded to a change in the demographic that was actually even responding to the survey, and so we do, you know, try to do the things that we need to do to track and monitor survey performance, and part of that involves pilot study testing, and, you know, that's, you know, why we have this, I would say, fairly vigorous testing program.

The next steps, based on the survey report, and, you know, I have been to several meetings, and I point out that, you know, these two pilot studies that I presented -- First of all, they are of limited

sample size overall, and the duration of those studies is limited also, and so there are some constraints there, in terms of, I would say, the -- You know, the constraints that were in place for the study designs, and, obviously, when you're doing a pilot study, you do what you can afford to do, and try to make the best design decisions you can, but, that said, you know, there are some limitations, and so, you know, that's worth pointing out. The general result that has been presented of a drop in the estimates of 30 to 40 percent -- Overall, that's the case, but, in general, based on the studies, and the limitations that I expressed for them, but, that said, I think there's -- It points to the need for the follow-up study that we're undertaking in 2024.

In this follow-up design, we look at the combination of the one-month wave, in combination with the question order change, and, I mean, obviously, we could continue the current FES design with the two-month waves, but there's an opportunity here for us to look at the impacts of question order changes on a shorter timeframe and point to the fact that a shorter timeframe has been something that's been requested by our partners, as a priority for more timely and more precise and higher-resolution estimates overall, and, obviously, that has impacts on how we present information, in terms of the data standards that we just talked about as well.

In 2024, we'll undertake a larger study, for a full year, and, essentially, it will be a side-by-side benchmarking study that involves a full suite of states that are currently involved with the FES, and, also, comparative samples sizes, and so the FES sample size that we currently use will be matched by the one-month wave sample size, and so, essentially, we'll be doubling what we would normally use to conduct the FES for the one-month comparison, and so it's a tripling, overall, of the amount of sample.

The revised design includes both the questionnaire changes and the administration of one-month waves, and the idea is that, for looking at calibration, or transitioning, it's best to combine these two effects together, for calibration purposes, because it should simplify the model, and, in speaking with Jay Breidt and the other consultants involved with the development of the model, the calibration model currently used to convert CHTS estimates to the current FES design, they feel that it's a doable process, and they have actually started working on the calibration model and doing some simulations based on the previous pilot study that we conducted for question order, and so that should help at least expedite the process, once we start to get data rolling in from this follow-up study.

The follow-up next steps, I mentioned a little bit about calibration. The model will need to be updated to account for the new design changes, and we are working on that right now, as we speak, and try to start incorporating data from the follow-up study in 2024, as soon as it becomes available, and so that will be at the wave and month level, depending on the treatments that we're looking at, and so we essentially will, you know, gather data, as the year goes on, and add that to the model, to hopefully better inform it.

Given that, that we're successful at producing the changes to the calibration model, and it's able to handle this change, we still need to have a peer review of that model. We need to complete the study, obviously, first, before that even happens, and we need to update the current transition plan and coordinate with our partners, and, you know, we expect quite a bit of deliberation with folks in the Gulf, as well as the Atlantic side, and, in the Gulf, we have to consider impacts to state surveys as well as the federal surveys.

We think that a reasonable time for implementation of the new FES design would be 2026, given the successful review and completing the study with favorable results, and, you know, the fully-calibrated time series -- We are aiming to get those finished by the end of 2025, in time for producing the modified catch series for 2026 back, and then also implementing the new survey in 2026, and so that's the goal, and that's the follow-up that we're planning, and, obviously, some pieces have to fall into place before that actually works, and there are still some questions about whether, you know, we will have a favorable review or we can successfully complete the study.

We are in a position, right now, where we have modifications to our contract, and we have cleared all the hurdles that we need to to start the survey, including Paperwork Reduction Act clearances with OMB, and also coordinating with Gallup, who is the current contractor for the FES, on, you know, getting the surveys printed and mailed and getting those contracts in place for that work in 2024, and so I think we're in as good of a position as we can be at this point, and, you know, time will tell whether we see the same results as we have seen for the previous study.

My take is that, you know, we're dealing with a shorter recall period, and so that, obviously, might have an impact on the scale of estimates that we receive, in terms of recall, but we are anticipating a similar trend that we saw for the previous study, which was a reduction in the estimates. Whether it will be at the 30 to 40 percent overall, I don't know. It's worth pointing out that, in the previous study, the reductions for private boat were lower than they were for shore mode, and so shore mode was more in line with 50 percent reductions in catch, whereas the private boat mode was more in line with 20 to 30 percent, and so that has to be taken into consideration as well.

Anyway, I will leave it there, and I know I've kind of presented a lot of information here, and I have even managed to confuse myself somewhat, but I will -- I will make the offer that, any questions that I can't answer here, that we would be happy to follow-up on, because, normally, I would have Rob Andrews present this information, but Rob is attending another meeting at this time, and so thank you, Jeff.

DR. BUCKEL: Thanks very much, Richard, for that very informative presentation, and it's great that your office is -- You know, you're busy enough with just doing the MRIP calculations each year, and it's nice that you have time devoted to research and found this potential error and bias. Before we get started on questions for Richard on the second part of his presentation, we're about at the midway point for the morning, and we'll take a ten-minute break, and we'll get back here at 10:30. Thanks.

DR. SERCHUK: This is Fred Serchuk, and I have joined the webinar now. Thank you.

DR. CURTIS: Thanks, Fred. You're coming in loud and clear. We've got you.

DR. HUNT: I've got a question. I've got a question on the PowerPoint that I wanted him to kind of go back, and are you going to shut this thing down?

DR. CURTIS: Hang on, Kevin. We're going to take a ten-minute break and then resume with questions by the committee.

DR. HUNT: Can you leave the questionnaire up, or leave the presentation up?

(Whereupon, a recess was taken.)

DR. BUCKEL: All right. Back to your chairs, please. It's time to get started. All right. Thanks, everyone, for coming back on time, and so we're at the -- We just received the second part of Richard Cody's presentation, and so we're going to open things up to questions for Richard, any points of clarification or questions on the presentation. I've got Alexei here, and then Kevin Hunt after that.

DR. SHAROV: Thank you, again, Richard, and this was really cool, and eye-opening, at least for me. For many people probably, that's what they knew for a long time, and just a few things that are coming up with -- Sort of following-up the presentation, and probably many of us will think in the same direction, or maybe some will disagree, but what I see here is actually -- It seems, to me, that you have indicating that reversing the order of the questions would result in less bias and more accurate estimates of the effort, but, honestly, what I saw here is two different sets of estimates, which have not been validated.

I didn't see any indication, any proof, of the fact that the alternative approach is a better one, and I might be wrong, but I would like to hear others, what they think, and probably you guys further with this too, and so you might have your own reasoning, and, in that sense -- I mean, essentially, we are investigating the recalling process of our brain, how it operates and works with memories, and we have no clue.

The arguments that you have, I accept them as plausible hypotheses, but no more than that, at least for me, and I wonder, for example, if we could look at, or if you looked at, sort of studies, similar studies, from other area, like from the industry, for example, where they study other activities, like shopping, for example, right, where you could do the same survey with similar treatments, but where the respondents have no interest in -- You know, they are more neutral to the subject, as opposed to here, and they are proud of their fishing activity, and they might be telescoping, as you're suggesting, but, if you ask them questions of, you know, how many times did you go to the grocery store, and how many times did you buy a can of soda, or salt, or whatever, and I wonder if you would see the same effect there, if you reversed the question, or not.

I wonder, because the industries are so intricate in selling stuff, and whatever, and we might have already questions somewhere in the publications, and I have no clue, but maybe you do, but validation is the key here, and two things that I could think of, and I'm pretty sure that you already discussed it, but an example of the attempt to count to -- Well, to estimate the total fishing effort in Maryland, in Ocean City, which was done recently by the Mid-Atlantic Council, is an example where you have a totally independent -- A different way of estimating the effort, which could be maybe used, in this localized case, to compare the estimates from FES, which would be done by -- You know, in these two different ways.

The other alternatives that I was thinking about is there are a number of anglers that are very particular in keeping their logbooks, and their absolute records, of every single trip that they make, and I know that locating them, and finding them, and extracting the information, is expensive, but probably it would be one of the very few possible ways of validating and actually trying to figure out whether the changing question is real or is it just -- Well, is it just variability of, you know, how the -- The variability in the estimate of the activity that, you know, we measure by just doing

it in two different ways. Thank you, and that's what I thought, and I don't know if you have any answers on those suggestions, and that would be good to hear. Thank you.

DR. CODY: I mean, that's the big question, is coming up with something that is a plausible way to validate, or at to least corroborate, the estimates that we get. I mean, it's no secret that the reason we do the sample surveys is because we don't have -- We don't know the truth. In the case of the Ocean City study, I think there's a ways to go there, in terms of their ability to, you know, compile those data and for us to come up with a valid comparison, or meaningful comparison, between any estimate that would be derived from that, versus what we come out with with the survey.

I mean, the surveys -- I think, you know, there's lots of literature out there that indicates that lots of surveys try to estimate different parameters, or the same parameters, and end up with different estimates, because there is design effects that are figured in there, and there is other considerations as well, and we have been looking, lately, at what the Census Bureau does to make corrections to their surveys, and, you know, panel studies, like you mentioned, are one way to do that, and perhaps a way to validate some of the results that we get.

The trick will be, you know, coming up with something that is, well, affordable, first of all, and then meaningful, on the second side of it. I mean, the thing about the Ocean City study that Jason Didden compiled is that it's still a survey, and it's still subject to a lot of the same assumptions that we make with our surveys, and so it's another estimate, and, you know, I think the trick will be presenting that information in a way that it doesn't cause more confusion, rather than help inform the current survey that we have.

I would be, you know, all for other sources of information to come up with, you know, corrections for what we do, and I would probably advocate that those corrections are -- If they're not devised by us, you know, or not part of our estimation process, they get handled elsewhere, maybe at the assessment level, or data analysis level, outside, but I think the trick is going to be, you know, to come up with good studies that actually -- You know, we have the funds to conduct and that we can make a meaningful comparison.

The other thing that I will point out too is that, you know, it's likely that we would be looking at a point estimate for a given wave, or a given estimation domain, that has, you know, a fair bit of variability in there, and what was indicated to me from the Ocean City study is that, you know, our estimates are still within the realms of possibility, and they did take some, as Jason called it, researcher discretion, when it came to decisions about how to use the data, and so I think that's still in a preliminary format, but I think that we probably need to be looking at other methods for doing that, and there is some possibilities too, with satellite technology, to do things like boat counting, and it's worked pretty well for, you know, enumeration of endangered species, whales, right whales, and what have you, and so there is some potential there for getting at a better sense of what's the truth.

DR. BUCKEL: Thanks, Richard. Next up was Kevin Hunt, online.

DR. HUNT: Richard, nice job on these. Could you go to Slide 20? I've got a question on how do you all treat item non-response, and I think it was 20. It was 20 at the bottom of your slides, and page 20, it said.

DR. CODY: There you go.

DR. HUNT: You know, I've done significant numbers of surveys, and usually a blank means zero. In this particular questionnaire, and I guess it's the FES, you have instructed them to enter a zero with none. If somebody, for example, put twenty days in 11b, and then twenty days in -- I am trying to think, and these are not consistent, and I thought these were a continuation of shore, or is that a continuation of 11? If somebody said they fished twenty days from above, and then they said they fished particularly say twenty days in March and April, how do you treat -- And they left everything else blank, and do you treat those as zeros?

DR. CODY: Well, we have a -- There is a QA process that identifies, you know, inconsistent data, and so those mismatches, that I would call them, where you have inconsistent information say at the annual level, versus the two-month reference period, and those are not included in the data. Those are removed, and so if it's flagged, because there are more days in the two-month period than in the twelve-month period, that gets removed.

DR. HUNT: Okay. That's inconsistencies, but what if they're consistent? Do you treat everything else as a zero? Say somebody says that, in the past twelve months, I fished twenty days, and then I fished twenty days in March and April, and then you can make the assumption that, every other month, they fished zero days, and is that how you do it?

DR. CODY: Well, we're just using the estimate from the previous wave, and so, for estimation purposes, we don't use the annual question. That's basically just in there just as a bounding technique to -- You know, to gauge inconsistencies, when they return the questionnaire, and so we don't use the annual-level number, and we just use the wave-level number. Does that answer your question? I feel like I'm missing the point here.

DR. HUNT: Well, yes, and just say Question 11a and b. The guy leaves Question 11a blank and fills in twenty days for 11b, and what do you use for that person's data in 11a? Is that a missing value, or do you treat that as a zero?

DR. CODY: That is treated as a missing value.

DR. HUNT: I was trying to look at your estimates, and why some may be higher than others, and, you know, if you have a total there, you knew it would be zero, but you don't have a total, but different -- You're going to have different missing values from every questionnaire, in different waves, and so the estimates may be higher if you have higher non -- If you have higher item non-response in a particular wave, for example.

Now, from a design perspective, if you're really trying -- I've gone to the fact that I can't stand these anymore, and I add, if it's zero, leave blank or enter "zero", because I treat everything as zeroes, because, 95 percent of the time, it is, but you didn't tell them that on page 25, and on page 30, and, on page 25, your different questionnaires, you have not instructed people to enter a zero on, for example -- Let's look at 15, the first one, FES Question 15, or Treatment 1, and you did not tell those people to put a zero, and so how do you treat a missing in that case?

DR. CODY: Let me see. I will have to check that that's not in the current FES design. This questionnaire goes back to 2015, during the testing period, and so it might not reflect the current

design. I will have to get back to you on that, but, as far as I'm aware, for a non-response to an item, it's considered an incomplete questionnaire, and so it's excluded. I can -- I will have to probably confirm that with Rob Andrews.

DR. HUNT: Yes, and, you know, to me, that's it. You know, when I do economic, you know, expenditure questions, or days fished, if you do not treat missing values as zero, you have exorbitant estimates that are really not realistic, and so, you know, but, if you're going to compare question orders, every other part of that survey should be consistent, and so, if the current FES questionnaire tells them to put a zero, then the treatment questionnaire should also tell them to put a zero, to be consistent with everything else, other than question order.

You know, I would look at that. You know, if you're treating it as missing, and the majority of them are zeroes, you are overinflating estimates considerably, and, you know, they just don't make sense. It would probably make more sense on an expenditure list than it would on a days fished, but I think, if you're going to compare question orders, everything else needs to be consistent, and so I don't know if the page 20 questionnaire is how it is now, or if page -- Where you've got that, enter zero with none, because, if you don't include it at all, it's up to the researcher's discretion of how you are treating them, and, if you're making the assumption that it's either missing or a zero -- In most of the work I've done, you're better off making the assumption it's a zero, because that's going to provide you a much more conservative estimate, and more likely closer to the correct estimate.

DR. CODY: Yes. The majority of the surveys we do get back are zeroes, but, like you said, there might be still an inflation factor to consider, you know, associated with whether it's zero or missing, where it is actually a real zero.

DR. HUNT: Yes, and, you know, one of your waves may have a hundred missing, and the other one only has five. Well, the one that has a hundred missing, you're going to be overestimating much more than you would on the one that only had five missing, and so now a check box, I thought -- If you go down to page 30, the check boxes, I thought -- You kind of took care of that in some of these, and you've got check boxes, and then you've got -- Some of these look like you can make the assumption that they're a zero, based on how you ask the question, and the check box -- You could make sure those two blanks underneath it, or at least the one underneath it, would be a zero. Let me see. Did not recreational saltwater fish from shore in the last twelve months, and you check the box "no", and that automatically means the next question is zero, and that question that your pointer is on is zero, and I'm assuming that you do that.

DR. CODY: Yes, we do that. Yes.

DR. HUNT: But, if you didn't have the check box, and they skipped it --

DR. CODY: Yes, and --

DR. HUNT: It's basically the same thing, and so, the more you can have those little check boxes, for things that you're really worried about, that, you know, we're -- You know, they don't, and just, you know, be consistent, and, if you're going to tell them to put zero, tell them to put zero in every questionnaire you've got, and don't have it in some and not in others.

DR. CODY: Yes, and, I mean, the thing is, for these pilot studies, you're looking at, you know, just various versions of the original survey form, and I think, on that page 30, that first -- The one in the far-left, that's the current design. As far as I know, that's the current way it's presented in the FES, and so that check box is present, you know, in the FES right now.

DR. HUNT: Okay, and none of them telling them -- They're just either leaving it blank or putting a zero, and there's no instructions whatsoever on any of them, and I just -- I just think you need to look at making missing values zero in your estimates and look at the differences between those two. You know, it's just a thought.

DR. CODY: No, and we can check that. I mean, we compile all the information on what's missing, and just incomplete surveys and so on, and so we do have that information available.

DR. HUNT: Okay, and that's just -- I'm sorry that took a while. The other point is you guys said you were looking for a cheap method, and have you guys looked at pulling a sample of 400 to a thousand and sending them a text message every night at seven o'clock, just asking them if they saltwater fished today, as a check that you can then follow-up on, in either waves or at the end of the year, with those same people, short of doing a diary?

To me, you know, everybody is walking around with their phone, you know, and yet messages all the time of opt-in or opt-out, and, you know, if you had a panel study, for example, where you didn't have to have them fill out diaries, and you just sent them the one question of did you fish today, yes or no, and that's it, and they got the same message at the same time every night, to me, that is a cheap, very cheap, way to kind of then follow-up with mail surveys, to see -- Or phone surveys, to see what their recall is for any given time period throughout the year, and so that's just a suggestion. I've never seen anybody do that.

DR. CODY: No, and it's a good point, and it would probably depend on the quality of license information that's available, whether we get an email or a phone number for licensed anglers, and that's probably the best source for looking at that. We are -- You know, we are looking at panel studies, and what they might look like and so on, to address some of the data gaps that we have, and so, you know, and that's what's been used for the current U.S. Fish and Wildlife Service survey, is basically panel studies, and the Census Bureau uses them as well for making corrections and adjustments to their estimates, and so I think, you know, that's something that we know we're going to have to pay more closer attention to over the coming years, because, you know, it points to that whole -- That philosophy of using additional data sources to inform what you already have, and additional methods as well, and I think that's where we're heading. I mean, I think there are some big opportunities coming, in terms of accessibility of different datasets to, you know, inform things like weights, sample weights, things like that, and so, you know, that's certainly something we're very interested in.

DR. HUNT: Well, you guys are doing a good job, and I'm not critiquing you too hard here, and I think you're doing the best you can do, and you're at the forefront of this, and so, you know, you're going to be the first to make mistakes, and so don't let that get you down.

DR. CODY: Thank you.

DR. BUCKEL: All right. Next, I have Steve Turner.

DR. TURNER: On page 31, the last bullet is mode order was not significant when twelve-month question preceded two-month question, and were any of the other results significant?

DR. CODY: Yes, and the -- Within the two-month and twelve-month order estimates, that middle bullet, the estimates were significantly lower when the mode was presented second, and so, in other words, when you had shore and PR, whichever mode was presented second, those estimates were lower.

DR. TURNER: Right. Sorry that I missed that point, and so, based on this conclusion, is -- The third bullet, you basically think that the mode effect -- You know, in some of the stuff, you're saying things are not significant, but there is a trend, and do you think that the lack of significance means that the mode order is not critical, or does not provide some information or bias?

DR. CODY: No, and we have some evidence, from some of our studies, that indicates that, if you ask about private rental boat trips first, you tend to get -- You tend to get a larger answer, and I think some of that has to do with the fact that you're starting out with something that's a little bit more memorable. With shore estimates, if you start with that, I think there may be a tendency, more of a tendency, to draw in trips from outside the period, or, if you fish a lot, to forget some trips as well, because there were some inconsistencies between the states, in terms of the results that we saw, and so there is -- You know, I think mode does -- I mean, it doesn't have a zero effect, and it has some effect, for sure, but the take-home here is really that, if you're going to bound a reference period, put that bound in before you put the reference period, and it tends to at least get folks thinking about their trips for the previous year, and then maybe that provides some of the comparison that can be made with the two-month period for the reference.

DR. TURNER: So, if there is some effect of mode order, even though it's much smaller than the bounding effect, how are you going to address the question, and are you going to maintain consistency with past order of the mode question, or how are you going to address that?

DR. CODY: Well, I mean, the evidence, so far, suggests that those differences are not significant, but there are potentials here for us to randomize question order, things like that, or randomize mode order, I should say, within the survey, and there is -- I tend to favor sticking with a method so you don't end up with two different estimates on a given wave, and that's another -- That's something else for us to compare, but, at the same time, that could be something where we randomize it, and, you know, get the result for the overall estimate.

DR. TURNER: Okay, and so my next question relates to calibration, and so, when you did -- When MRIP, or when S&T, did the calibration for the problem with the dockside sampling, you ran calibration surveys for three years, and then you did the analytical work to create the corrections, and so what is the -- Is the current proposal just to have one year of side-by-side FES surveys, or are you going to have multiple years of side-by-side surveys, and, if just one year, are you concerned about a gear effect?

DR. CODY: I mean, that's a potential, but, in talking with the consultants, they think that the model is, you know, robust enough to make an adjustment, you know, a small adjustment, to account for mode effects, and so, you know, in the previous model for the FES calibration, we went from a telephone survey to a mail survey. In this case, we're just changing -- We're making

a minor input change to what was encompassed by a mode effect, and so, you know, we'll see how it plays out, but, right now, the consultants are doing some simulations based on just resampling the data that we had from the previous pilot study, to see, you know, what adjustments they can make to the model, and the gear effect will be something that, you know, we have to consider.

If it's consistent with what we see with the previous pilot study, and, in other words, just sort of a systematic difference, or reduction, in the estimates, I think, you know, we can probably justify just using one year, but, you know, as I said, the big uncertainty, for us, is can we complete the study, first of all, and that's less of an uncertainty, but getting to the review process, given that we are working on the calibration, you know, right now.

DR. TURNER: Your discretion, right now, basically is for the bounding effect, and for putting the lower-term question first, and is that correct, because you said "mode", whereas I think you really mean the bounding.

DR. CODY: Yes. Sorry.

DR. TURNER: Okay. Good. Thank you.

DR. BUCKEL: Thank you. Next up is Kai.

DR. LORENZEN: Thanks, Richard. This is very interesting, and I think it's a good reminder that, you know, what we're doing is a very complex and, you know, advanced way of trying to estimate a quantity to which we do not know what the true answer is, and, obviously, as, you know, you continue to look at how the survey is done, and, you know, every now and then we will find, you know, ways in which we can perhaps improve the survey, and, in this case, like I think Alexei, I'm not 100 percent sold on the idea that the new question ordering is necessarily more correct than the old, and I think it's somewhat circumstantial evidence that it's actually more accurate.

I think it produces results that maybe are more in line with what we think might be right, based on other surveys that we compare it to, but I think, you know, we've got to be a little careful not to jump to conclusions there, but, I mean, the reality is that, yes, it is an estimate of something that we do not know the true answer for, and it's very difficult to validate that, and we'll just have to live with the idea that that's what it is, and it's sort of an estimate, and so, to me, one of the really important questions, for us and for the council, is how do we -- And for NOAA, but it's how do we deal with updates in the survey, because I think this is causing a big stir at the moment, and people are expecting that there will be like big changes, and we don't know, and we're all at-sea, and I think it's actually probably a lot less dramatic than what people think.

I mean, it's rescaling one of the inputs to our assessments, and it's sort of rescaling the way we monitor into the future, and, you know, if we apply this to a fishery that -- Just as a hypothetical example, if we apply this to a fishery that's entirely recreational, it actually makes no difference whatsoever to the management outcome. You know, it will change the numbers, and everything else stays the same, and so I think it's very important to have a perspective on, you know, what this means for our management, going forward, and how we deal with, you know, improvements in the survey that, obviously, will have to happen every now and then, and I think -- So, to me, the biggest question, right now, is actually not about the details of the survey, but it's about how we

move forward in our management process over the next years, while we're sort of waiting for that adjustment to happen.

I think that is something that -- And it's probably not something that's really on the agenda for today, but we should talk about that, as the SSC, and one thing that surprised me, because I think I've seen, you know, that question order presentation a few times now over the last six months, less detailed on some of the other things than what you're presented today, Richard, but what surprised me is that it hasn't come with a companion presentation that would outline the sort of implications of this and some sort of strategy as to how to move forward, because I think it would be really useful to get that, presumably from the Science Center, because I feel that it sort of causes more of a stir, at the moment, than is really warranted. Thanks.

DR. BUCKEL: Thank you, Kai, and I just want to point out that we'll keep the questions to the clarifying questions on the presentation, and then, when we get to our agenda items, we can get back to Kai's point about what to do, but, Richard, to that point, please.

DR. CODY: Yes, and, I mean, Kai, it's been a concern of mine that, you know, we are setting very high expectations for a reduction in the estimates that, you know, most people seem to agree with, for one reason or another, but it's based on, you know, a very limited pilot study, and I think, you know, there is -- There probably is some management of expectations that needs to be done to go along with that.

You know, I had -- It's been my philosophy anyway, within Science and Technology, that, you know, we do these pilot studies, and we compile the results, and then, you know, when we get to a critical mass, where there is X number of changes we should make to the survey, then we compile -- We do, you know, it basically bundled and set a timeframe for something like every ten years, or every, you know, five years, or so on, because it is so disruptive, and, you know, it does cause paralysis, when there's an expectation that, all right, the estimates are going to change, and so what can we do? We can't do anything with allocation, and we can't do anything with setting quotas, and, you know, there are things like that that just cause a lot of, I think, angst for everybody.

That message though that you gave me regarding guidance, or at least some indication of a path forward, that was what I heard at the Atlantic States Commission meeting last week as well, and so I have passed that along to, you know, our leadership, that they, you know, expect to have to at least chart a path forward, further than just saying, okay, we're going to implement the survey in 2024, review it in 2025, and then try to stand it up in 2026, and those are pretty uncertain also at this point, but I think the agency itself is faced with the dilemma of, all right, we have this information that, if it got out, it would not look good, and it would look like we weren't being transparent, and so they tried to get out ahead of it, and I think, with that, we're sort of learning the landscape from that point forward.

DR. BUCKEL: Thanks. Next up is Brian Cheuvront.

DR. CHEUVRONT: Thanks, Jeff. My questions are related to the cognitive interviews that were done, but, first off, I wanted to say I think this is great that you've done this, because, in my years of doing surveys in fisheries -- When I first started, I looked to see if I could find any information on response bias and fishing behavior, and there basically was very little that was relevant out there, and I think there was one study that was done under the auspices of the Fish and Wildlife

Service, many years ago, and I'm talking, when I was looking at this stuff, it was well over twenty years ago, when I was first looking at response bias, and so, first off, I just want to say it's fantastic that you're doing this, because it's been really long overdue.

Getting back to the cognitive interviews that you all did, you made the comment about that you thought that, and correct me if I'm wrong in my interpretation of this, but you said that perhaps the cognitive interviews indicated that it was the eagerness of respondents that might be a cause of the telescoping, and, well, first, I guess am I correct in saying that? Is that what you were indicating, Richard?

DR. CODY: Yes, more or less. We did see a frustration when they couldn't report about trips in the cognitive interview setting, you know, and that's very controlled, and so, yes, I mean, it suggests that they tend -- That they would tend to telescope from outside the reference period.

DR. CHEUVRONT: Yes, and the reason why I kind of brought that up is, in my background as a social psychologist, we're always looking at not just the mechanical or statistical or the survey reasons for why people respond, but we want to look at what it is other than the mechanics of what you're doing that influences the responses, and there's a huge body of literature out there, in things like telescoping and social desirability of a behavior and how that influences the response types that people give and how the time period that you're asking about and the social desirability of the behavior and how they interact with each other.

Getting back to something that Alexei said earlier, talking about whether you should look at a more innocuous behavior, like grocery shopping, and there has actually been studies and things that looked at self-reporting on voting behavior, or health practices, and things like that, and how those are affected by even things like social desirability of the behavior in question, and so, not knowing what you all did in your cognitive interviews, I don't know if that was kind of addressed, or whether you're even planning on doing cognitive interviews in the future, and, if you are thinking about cognitive interviews, and no one has done a deep dive into the behavioral science literature on response bias and other characteristics, psychological characteristics or social characteristics, of what's being asked, you might want to do that, and see if that could influence the questioning that you might ask in the future.

For example, you might want to ask a question of how important do you think it is to report accurately on how many fishing trips you took in whatever the period is, and then follow it up with a why question, and that could get at aspects of social desirability of the behavior. I don't know, and I'm just throwing that out there as maybe a way to help explain other things that could be going on, other than just things like order effects and things like that.

DR. CODY: Point well taken, and we are, right now, in the process of doing the cognitive interviewing for the revised questionnaire for the 2024 study, and so that's ongoing as we speak, and we're working with Westat, which is a statistical firm out of Maryland, but we also have input from, you know, Lynne Stokes, that retired from SMU, and Virginia Lesser at Oregon State, and Joe Dever at RTI, and then also Jay Breidt at NOAA, and so we do keep -- You know, we have a team of consultants that we regularly work with. I will find out more about what's included in this current round of cognitive interviews and get back to you on it, and certainly, you know, some of the points you made are very good ones, and, you know, if we can include those suggestions, I think it would be helpful to us, and so thank you.

DR. CHEUVRONT: Yes, and just a last comment is I think that would help -- That could potentially help explain some of the variability in the differences you're finding as well, and so I just wanted to offer that as a potential suggestion that you might want to consider for the future, but thanks, and I just think you all -- The fact that you're doing this is just really fantastic.

DR. CODY: Thank you.

DR. BUCKEL: Next up is Genny.

DR. NESSLAGE: Thank you. I have two kind of detailed questions about the presentation and the Andrews paper that I hope you will be willing to entertain. On slide, or page, whatever, 26, that figure showing the difference in total effort estimates by geographic area and fishing mode, is that the same as Figure 2 in the Andrews paper?

DR. CODY: Let me take a look at it here. Hang on.

DR. NESSLAGE: Yes, and I know I'm putting you on the spot. Sorry.

DR. CODY: Let's see. Yes, it should be the same.

DR. NESSLAGE: Okay, and the reason I'm asking is because the Andrews paper describes the four states sampled being Florida, Georgia, Maryland, and Massachusetts, but, in Figure 2, and in your presentation, it says "Maine", and was it actually Maryland?

DR. CODY: So, in both of those, Maine, Massachusetts, Georgia, and Florida, and I am not sure. I'm not sure.

DR. NESSLAGE: I was just curious, because I figured you were trying to get geographic representation down the coast, which makes perfect sense, with Massachusetts being kind of a New England, and then Maryland in the middle, and, if it was Maine and Massachusetts, and then Georgia and Florida, I'm just wondering why nothing was selected in the middle, and Alexei and I are both from Maryland, and we're looking at each other like, what about the Mid-Atlantic, and so, yes, that's something you might want to look into.

Then I have a question about Table 2 from the Andrews paper. After looking at your presentation, and reading this, I was really struck by how different the results, or how the strong the results, were in Florida, and we know that Florida is a big rec state, and it has its own sampling issues there, but, in Table 2, it shows FES total responses in Florida were a quarter of what they were in the other states, but, when you did your treatments, they were more on par, and so I'm wondering to what extent you -- It's not discussed in either of the papers that we were presented with, or reports we were presented with, in our materials, of why that might be the case, why there was lower response, and what the implications of that might mean, or any other potential reasons why Florida results would be -- Would stand out, and so I was wondering if you could talk a little bit about why the response rate is so low in Florida and what the implications could be for management in the South Atlantic, based on these numbers. Thanks.

DR. CODY: I thought the response rate itself was fairly similar, but I will mention that we use Neyman allocation to try and achieve a certain level of precision for each of the states, and so, in the case of Florida, because fishing is more prevalent, we tend to need lower sample sizes, and so you end up with a smaller starting sample size, and, in fact, I think, if you compare Florida with Mississippi, for example, and Mississippi requires a much higher sample size to achieve a similar level of precision, and so that Neyman allocation is how we approach that, and it varies the sample size depending on the prevalence of fishing activity in the state, and I don't know if that answers your question, and it's probably more of a general response.

DR. NESSLAGE: Okay. That makes sense, and so you're trying to achieve a prevalence rate, but if the -- This is a stupid stock assessment question, but, if the behavior of folks in Florida is different, would you want to have the same prevalence? Would you want to have the same response rate? Do I need to rephrase that? Maybe that -- Does that make sense?

DR. CODY: I am looking at Table A2, and is that the one, A2?

DR. NESSLAGE: I guess I'm just talking in general, and I understand, from a sampling -- You have explained well, from a sampling point of view, why the number of responses might be lower, because the initial sample size was lower, because prevalence of fishing is greater in Florida, but I guess I'm asking, overall then, if fishing behavior in Florida is that much different than elsewhere, does it need special treatment, because the behavior of those individuals is so different?

DR. CODY: That could be the case. I mean, with Florida, we do have some concerns that, for instance, because fishing is more prevalent, and they're more apt to remember trips, because they made them, and they may be less likely to pull in trips from outside the reference period, because they have some to report, and so it kind of fulfills that desire to report something, and probably, because it's something that they do on a regular basis, it's probably more reliable, in some respects.

We don't have, you know, a study that indicates that, but that would be something that we would look at, in terms of differences that might exist for Florida, versus other states, and it certainly would be a consideration. I think, and I can't say too much at this point, but the calibration model does take into consideration state effects, and so there is a potential there to adjust for that in the calibration, but that doesn't -- That still doesn't, you know, address the current -- If the behavior is different overall, how do you handle it going forward? Hopefully I answered the question, or sort of, at least.

DR. NESSLAGE: No, and that's great. Thank you.

DR. BUCKEL: Okay. Next up is Jennifer.

DR. SWEENEY-TOOKES: Thank you. This is really interesting, and this is opening a whole new set of cans of worms for all of us. I wanted to return to something that Alexei brought up, and Brian really articulated very nicely earlier, but, in many places, in both of these articles and in the NMFS summary, there is a lot of reliance on all of this coming down to we're being very confident that this revised survey is better, because of cognitive interviews, or because of social desirability bias, but none of that gets spelled out very clearly, and there's not really any details about the methodology of these, the sample size, which makes me nervous that we're building a very large structure on a foundation that none of us can see, and so I'm wondering if you can talk

more about -- I know you mentioned with Brian that this was a consultant that did this work, but what gives us such confidence that these interviews, and this bias, is really what's making these be more valid than what we're already using?

DR. CODY: I would say there is probably -- You know, there's some indication, from the illogical response rates, you know, the twelve-month versus the two-month question and not matching up, and it's much higher in the current FES design than it is in the revised design, and, you know, that probably has something to do with question order.

I do worry that we are putting a lot of -- We're setting expectations for a decrease that may or may not occur, and the likelihood is that, you know, we're going to see a consistent -- Something that is consistent with the results that we already found, but I do take heart of your concerns though, that we may be painting a picture that is, we'll say, short on supporting evidence, in terms of, you know, the estimates should be lower.

We have done some calculations about, you know, the reasonableness of the current effort estimates, and, you know, those would appear to indicate that our estimates are on the high end, and certainly, you know, when you compare them to state surveys, and regional surveys, they tend to be higher, quite a big higher, and that's not to say that those estimates are not too low, and we put a lot of effort into, in recent years in the Gulf at least, to trying to get the estimates to a point where we addressed, you know, non-sampling error as well as we can, and, you know, tried to make improvements based on those kinds of studies, but the issue, for me, is that there's -- There will always be a certain amount of uncertainty associated with, you know, a self-administered survey, and, you know, we have studies in the past as well that indicate that avidity affects what's reported. More avid anglers tend to report more, and so there are things that concern us, that we're trying to address through demographic kind of profiling of the sample versus the respondents, to try and get a better handle on it. You know, I agree with what you're saying, and I think it is something that -- You know, it's a concern, that maybe we're wrong.

DR. BUCKEL: Okay. Next up was Fred Serchuk.

DR. SERCHUK: Thank you, Chair. I just wanted to follow-up on Genny's question about whether it was Maine or Maryland, and it's a real big inconsistency in the Andrews paper, because, on Table 2 in the paper, it talks about Maryland, and, if you go back to Appendix 2.1, or Appendix 2, it also talks about Maryland, and so Maine is never mentioned anywhere in the Andrews paper, except in these diagrams, which I believe must be mislabeled. It's unfortunate that it was published with it, and you've just taken the information that was presented there, but it's not Maine. It's Maryland, as Genny suggested. Thank you.

DR. CODY: I mean, the tables, for certain, don't match up with the figures, and so I think that's probably an error.

DR. BUCKEL: Thanks. Next up is Kevin Hunt.

DR. HUNT: I just wanted to make a clarification, and we've been talking a little bit about social desirability and bias and prestige bias, and that's when maybe a low-avid angler gives a higher fishing frequency, because of the status associated with that, and that's social desirability. What we're talking about, and maybe the reason for high-avid anglers responding higher estimates, is

what we call strategic bias, and that needs to be kind of teased out, the difference between social desirability bias and strategic bias, and I think -- If you think that, hey, if I report to NOAA that I'm catching a whole bunch of fish, they think that the stocks are bigger, and, therefore, they're going to give me a larger bag limit next year.

Now, your avid anglers are more likely to think that way, and it becomes a strategic decision how they respond to some of these, versus a non-avid angler who just is trying to look better to himself and to the interviewer, and so I think both of those are in play, but I think that kind of goes back to the methodology of the cognitive interviews and who have you sampled and things like that. I think both of those biases kind of need to be teased out.

DR. CODY: Just to your point there, we do some demographic characterization of respondents, and so we know that avidity is associated with certain demographics, and they tend to be younger males, you know, living in a coastal area, and so there are things like that that we look at, and we have metrics as well to get a sense of are we oversampling those individuals.

They may still be reporting, you know, at a -- We'll say a higher than other demographics, but that's one way of at least partially addressing that issue, and it doesn't take care of it all, but it helps us at least identify that it might be an issue, in some cases, where certain demographics may be overrepresented.

DR. BUCKEL: Thank you, and next I have Kai.

DR. LORENZEN: Since this has been sort of already brought up, I wanted to bring up avidity bias, because I think anyone who does angler surveys knows that they always, almost always suffer from some level of avidity bias, and it's very difficult to really quantify that, but I do know that if, you know, on average, my survey respondents go fishing every other weekend, it's probably not the average angler who is responding, but it's very difficult to really get a good handle on that, or to try and correct for it, but I'm wondering, you know, in this --

Of course, that does have implications for like total effort levels that we estimate, and I am wondering also whether, you know, there is perhaps some interaction, because the telescoping effect probably also has something to do with avidity, and I am wondering whether there is maybe some interaction in, you know, your different survey designs, and you may be reducing maybe telescoping, but it may also affect responses, and so, I mean, if you have -- Say if you have a more complex survey, you may have some people who, you know, decide not to respond, when they open that survey questionnaire, and so I'm -- I know it's sort of almost impossible, I think, to really investigate that, but there are all sorts of possibilities of subtle biases that I think are introduced, and we should not forget, you know, the avidity bias and sort of who responds at all and how that may interact with the other, you know, elements of the survey. Sorry that I don't have a solution, and I just have a question.

DR. CODY: Well, let me see if I can -- I'm not sure that I understood your question there, other than, you know, we should be looking at those kinds of things.

DR. LORENZEN: That was it. Sorry.

DR. CODY: No, and I agree, and, you know, it has come up for several survey designs that we've looked at, that that is, you know, a potential issue, and even just an analysis of we'll say data from angler apps, and I know Chelsey is in the audience, and so are you, and so you're familiar with this, but I -- You know, it would be -- I think part of that is using, you know, auxiliary datasets to better inform the data that we already get, and then perhaps to be able to look at, we'll say, the effects of a management decision on the quality of the data that we get back, and I think we're at a point right now where, you know, we're providing estimates at a certain level of precision, and it probably will take a lot more information, from different sources, and also from sample size increases, things like that, to get us to that point where we have some sort of a system in place where, you know, we can flag things like an increase in reporting from an avid demographic, we'll say, those kinds of things. You know, I think the point is well taken, and it is a concern.

DR. BUCKEL: Go ahead, Kai.

DR. LORENZEN: Just a quick follow-up, and, of course, I mean -- I guess the difficult part is the, you know, the avidity within the demographic. If you look at me, I look like someone who should be out fishing all the time, just because of my demographics, and I actually am not, but, more to the point, the -- I think FWC did a really interesting study, and I think, if Chelsey is online, she might want to chime-in, and I think they did a study on lobstering in the Florida Keys, and so they were following-up in a survey, or they have been for many years, and so people get licenses for the lobster mini-season, and then they follow-up with a survey and ask did you actually go lobstering, and then a fairly high proportion of people say yes.

Then they did a follow-up, and so they texted people, and called people, who did not respond to the survey, and it turned out that, if you add that information in, it's a much lower proportion of people who actually -- Who got the licenses who actually went lobstering, and if you can maybe expand on that, but it's a good illustration of the level of avidity bias that we can get in surveys, and this is a case where they were actually able to quantify that.

DR. CODY: Yes, and I would say non-response as well, respondent bias, and we have done follow-ups on non-response, non-response follow-up studies, where you basically get back in touch with people who haven't returned the survey, and those results, at least for the FES, and the FES is a very simple survey, and so it's not a complex survey, where, you know, the difference -- There was no real observable difference between the responses of those follow-up, and we'll call them less-cooperative respondents, and the initial respondent, but there's still a question there about are you still reaching the right segment of the population, in terms of addressing non-response bias.

I mean, it's still essentially a sub-population that has responded to the survey, and so it doesn't match up to what you would expect for a non-respondent. You know, you can only do so much, but I do think that a follow-up is a very good strategy for getting at least -- Accounting for that avidity bias that may be in the initial response pool, let's say.

DR. BUCKEL: Thanks, everyone, for the excellent questions. We have one more from Kevin Hunt. Please go ahead, Kevin.

DR. HUNT: I just wanted to chime-in on non-response. Yes, follow-ups are great, but Mark Fisher developed a methodology to correct for non-response bias in the 1997 paper in *Transactions*

of the American Fisheries Society, and are you guys trying to correct? I mean, to me, has anybody even looked at that? Mark is kind of -- I followed his research in Texas TPWD for years, but it's an effective way, if you know a lot of information from the sample, prior to the questionnaire.

DR. CODY: We do a -- We include it in our weighting process, and so the respondents are basically matched to demographic information from the American Community Survey, and so we use that to get a sense of, if the respondent pool is similar to the initial sample that went out, and we weight accordingly, and so, if one demographic is overrepresented, then it gets down-weighted, and so there are things that we do, in that respect, to try to get a -- It depends on how -- I guess it depends on how meaningful your characteristics are that are used to characterize the respondents, and so that's one approach that we use.

DR. HUNT: I was just checking it out, and it sounds like you're doing somewhat similar things in your response propensity, but I don't know what you know going in, other than demographics, or if you've got to look that up in a post-hoc study, but Mark did a pretty thorough job, and we've used it in a lot of articles, and, you know, we've never had any negative feedback on that, and so it looks like the same thing, if you have some more data in your sample.

For example, I do stuff in the states, and we have gender, and we have race, and we have date of birth, and we have that they're a rural or inland county, and you can basically do the same thing that I think you're doing, but you may not have all that information going in, and is that kind of what you're saying?

DR. CODY: Well, we do it after the fact, and so we use the U.S. Postal Service delivery sequence file for our initial sample draw, and then we match that up to license information that we get from the National Saltwater License Registry, and so that helps us improve the hit rates on fishing households, and we weight for that, based on some population information, and so there are things that we do, you know, with the sample, to balance it, basically, and to improve the efficiency of it, but I would say that most of the demographic part of it is done at the end, when we're coming up with final weights for the samples.

DR. HUNT: That's the same way as Mark, and I don't think you can do it any other way than after, but, yes, it sounds like you're doing something similar, but, you know, you may want to read Mark's article from way back.

DR. CODY: We have the methodology, and I think I included it in one of the -- It's one of the links on the presentation, and so it's available, and there is an annual report that comes out for the FES that has, you know, summary statistics of the kinds of things that we look at, and so that's available as well.

DR. BUCKEL: Okay. I don't see any hands, online or in the room, and so I think we're done with the clarifying questions. Thanks, everyone, for the excellent questions to Richard, and thanks, Richard, for the excellent presentation. We're going to now ask the public if they have any questions or comments on this item. All right. Judd doesn't see any hands from the public, and so we'll move now to our action items, and I think Judd is going to put those on the screen, and we can address some of those before we break for lunch.

Okay, and so folks can see the action items that we need to address for the MRIP-FES, and the first is discuss the findings of Pilot Study 1 that evaluated recall error based on two-month versus one-month reference periods, and then the second is similar, but for Pilot Study 2 that evaluated recall error based on the order in which the survey questions are presented. Go ahead, Genny.

DR. NESSLAGE: I don't know if it's that it's lunchtime, or that these are really specific, and I think a lot of our comments are more general, and, for instance, Alexei's, and I think Kai's, comments about using FES as the benchmark, without validation of what is the actual truth, could lead us to chasing, you know, our tails, or go chasing a wrong -- Going down a wrong path, and how about that?

DR. BUCKEL: I agree, and I think that would come under 4, where we're discussing how the pilot study results will impact what -- We're going to say that it seems that the group is feeling that it's -- They're not ready to make some change, if I'm reading the group, because they're not sure what direction -- You know, which one is correct, right, and we have this question about validation.

DR. NESSLAGE: Right, but I think that needs to be an issue with both of the studies specifically, too.

DR. BUCKEL: Yes, and so we could capture that in that language there, for both Study 1 and 2, but is that what you're -- Would that be good? Okay. So if Judd could type that up under 4, and then we'll go to Steve Turner, while Judd is typing, and so, Steve, go ahead.

DR. TURNER: I am going to hold off a minute. My primary thought is the primary effect really relates to Bullet 2, and that is that S&T seems to have clearly demonstrated an effect associated with -- I have forgotten how they describe it, but basically the bounding effect, and that I seem to support a change suggested by these -- By their recommendations, and so I think that's the primary effect that they're talking about that's of concern.

DR. BUCKEL: Right. Thanks, Steve. Marcel.

DR. REICHERT: I think we discussed quite a bit relative to the first two action items, and I also think, you know, the follow-up study is critical, and my concern is the fact that the results may not be available until 2026, and I don't have a solution, but I think perhaps maybe an interim analysis, or something, that can provide us with some information in terms of where this is going, because this -- As many have said, this may have potential implications for stock assessments, and the stock assessment schedule, and, as a result, for our recommendations, management recommendations, to the council, and so, as I said, I don't have a solution, but 2026 is quite a long way away, and, at the same time, I realize that you need that time to conduct a thorough study, and so I'm struggling a little bit with that, because it basically ties our hands, and obviously the hands of others, in terms of providing those management recommendations, but that follow-up study is critical.

DR. BUCKEL: Amy.

DR. SCHUELLER: I don't -- So we have the SSC supports changing bounding considerations presented, and, based on the notes I've taken, I'm not sure we can make that statement. I feel like

we're making a statement that more work needs to be done to tease apart the different biases and the implications that they would have on the overall resultant stream of landings. I think we have no idea what the changes would actually be at this point, and I just -- I mean, I took notes on all the questions that everybody has asked, and sort of the responses, and I think, across-the-board, folks are interested in this, but there's no real conclusive evidence, one way or another, what the end result will be, given all the other concerns that were listed.

DR. BUCKEL: I would agree with that, and I think Steve was saying that there was a bounding -- That there was this bounding effect, but you don't know which way -- Right. That was clear, that that was a significant effect, but we don't know which one is correct, or which one is closest to the truth. Go ahead, Wally.

DR. BUBLEY: I think that goes for both. I mean, that's the thing, is they're showing there's an effect there. They're seeing these significant differences, but they're not showing -- Is that effect eliminating a bias or creating a new bias, and I think that's kind of where we stand at this point.

DR. BUCKEL: Well said. Genny.

DR. NESSLAGE: If Judd is ready, I have -- For at least Pilot Study Number 1, there were the two nit-picky questions I had about is it Maryland versus Maine, and then, also, the question about why the treatment sample sizes were equal among the four states studied, but, of course, as was explained well, the FES is based on prevalence, and so are you comparing apples to apples, or apples to oranges, when comparing these two treatments with FES?

You probably need a shorter statement than that, don't you, Judd, and so, up for Pilot 1, and we'll just get it all and move it around later, but questions about which states were actually involved in the study, the Andrews et al. study, remain unanswered, or need to be clarified, and point two was concerns about sample size differences between the treatments and FES and what that means for interpretation of the results. We are concerned about differences in sample size between the pilot study treatments, 1 and 2, versus FES, which is based on angler prevalence, and am I getting the terminology right, folks? Thanks.

DR. BUCKEL: Marcel.

DR. REICHERT: I probably should have asked this earlier, but are there any plans to compare the results to the Florida survey?

DR. BUCKEL: Richard, if you're still on, if you --

DR. CODY: Actually, there are, and we have -- Right now in the Gulf, there is a research planning team associated with the transition work for the various state surveys, and so part of that involves looking at things like just sources of non-sampling error with those surveys, and doing side-by-sides as well, and so, I mean, part of this FES study will allow us to do, you know, a side-by-side, in Mississippi, for instance, but they are currently doing some studies as well, and we have talked to Florida about looking at how they make adjustments to their estimates, versus the way we do ours, coverage adjustments that is, and so, yes, we are talking with them about, you know, trying to get a better handle on non-sampling error in general for all of the surveys in the Gulf.

DR. REICHERT: Thank you.

DR. BUCKEL: Thanks. Fred Scharf.

DR. SCHARF: So just maybe a change, and an addition. In that second bullet, Judd, where it says "no conclusive estimate which estimate reflects reality", would people be okay if we changed "reality" to "reflects true effort"? Then I wonder if, underneath, we could say that, like as a sub-bullet, that we could say the results of the pilot study indicate that the original FES survey design may be biased by telescoping error, but it's also plausible that the pilot survey design is biased by omission error. We don't really know which, right?

DR. BUCKEL: Kai.

DR. LORENZEN: So I would say "which evidence estimates better reflects true effort", because it may be neither that reflects true effort.

DR. BUCKEL: Steve Turner.

DR. TURNER: I wonder whether we want to basically take a step back as well and say that, as Kai just said, we don't know what the truth is, and, therefore, the effect is going to be essentially scaling the time series, and we can -- I am going back to what Richard said, which is perhaps we need to set some sort of time schedule for making changes that we anticipate in the future, as well as the changes associated here, and so what I'm trying to do is provide a perspective to the council that no survey can be expected to hit the truth, and changes to surveys are expected, for a variety of reasons, and so, essentially, the council should not be impatient to see corrections for this potential difference in survey treatment, because there will be other changes in the future as well, and it's -- Anyway, that's my concern, and I think we need some broad overview of the fact that no survey is -- Most surveys are not going to reflect the truth, and really what we're looking at is trend. There is probably less impact on stock assessment than there is on management for such changes.

DR. BUCKEL: Thanks, Steve. Judd, if you can capture that, and then we'll go to Kai and then Alexei.

DR. LORENZEN: This is a follow-on, I think, and it will get to be a separate point, I think, but, really, I think what we need is a systematic sort of exploration, or, you know, a document that will outline what the implications are of, or are likely to be, if say we had a 20 percent change, or whatever, in -- Because we're talking about basically a scalar, right, and so we're rescaling the recreational catch estimates, and I think, in the last council meeting, the council adopted this sort of ad hoc before-every-agenda-item question of is this going to be affected by the new MRIP potential rescaling, and then basically a tendency to kick things down the road if the answer was yes, and I don't think that's a productive way of going about it, and certainly --

You know, you can -- It's not to criticize the council, and I think -- I mean, they basically didn't, you know, probably know what to do, and they had to do something about it, but I think we can more systematically examine what the implications would be if, you know, such a change was eventually recommended, and it's really not rocket science.

A lot of it you can look at with a relatively simple model, or think through, and, as I said, in the -- For example, in the very simple case, where you have an entirely recreational fishery, everything would rescale, and nothing would change, right. In a fishery that is entirely commercial, none of this is relevant, and it's somewhere in the middle, where we have fisheries that have big recreational and commercial components, and, even there, you know --

Yes, there will be some rescaling, and it will maybe make a difference where that really changes our perception of what the catch trends are, and so, basically, the overall catch trend, of course, is a combination of, you know, the commercial and the recreational, and, if you rescale the recreational, it may affect the overall trend, and that may affect the assessment, but also remember that, of course, in the assessment, we have the indices, and we have the size comps and everything, and, you know, the catches are only one of the inputs, and so, overall, it should be possible to identify, much more clearly, what the implications would be of a rescaling. Also, I think it's important to bear in mind that probably generally those implications will not be as dramatic as people may think, on the basis of a 30 or 40 percent change or so, and I can see Amy being very agitated, and, Amy, I will give this over to you.

DR. BUCKEL: Amy.

DR. SCHUELLER: I guess I'm -- What I'm sitting here wondering is I'm not sure it's just a scaling issue, because I don't know the ins and outs of the calibration that they're doing, but there could be factors, like mode or state, that are interacting, or respond differently, in a non-scalar way, and so I don't know if I agree that this is only a scaling issue, and, I mean, we haven't been given any time series of landings, and, I mean, it would be really helpful if they were like this is what black sea bass landings look like now, and this is what it might look like in the future, or maybe it would be not good to show that, because it's a pilot study, and clearly we have a lot of concerns about how we should move forward, and so I don't know if this is just a scaling issue or not, but we don't even know if we believe there is a bias, based on this, and so what if the whole thing ends up being like there isn't any change? I don't know, and I don't feel like there's enough here for us to actually do anything, other than to keep what we're doing until we have better information.

DR. LORENZEN: Maybe I retract my simplistic analysis, but I think the point still is that I think we need a clear outline of what the potential implications are, and, ideally, identifying those fisheries where we might expect more change than in others, and so just -- I'm really concerned about everything being all at-sea for the next three years or so, because I don't think that's necessary, and I think it overstates the significance of any potential change, and we should not leave everyone in that position.

DR. BUCKEL: Alexei.

DR. SHAROV: Can we get to the first bullet for a moment, that the follow-up study will be critical, and I just want to follow-up on this, and I think it was important what I think Marcel proposed, and so I will comment on two elements here. First of all, a follow-up study will be critical to providing further guidance, and I think we all agree to that, and there is, you know, a clear plan that we saw outlined for 2024 that includes multiple elements, increasing the pilot study scale and, you know, spreading it to more states and increasing the sampling, et cetera, et cetera.

I don't know if we want to formally endorse it, and probably the MRIP folks are not looking for our endorsement, but we could, you know, state, for the council, that we agree that this is the appropriate way to continue forward and to get more reliable information, and so we could simply say that the existing plan is, you know, is appropriate, or whatever else, and whatever supporting statements you want to make, but I want to get a sense from the group, and maybe get a confirmation from Richard, that the plan, as it was presented to us, it seems, to me, it makes it clear that the intent is to make these changes, based on the preliminary results, unless the pilot study in 2024 shows something different, and so it seems, to me, that the decision essentially has been made, or it's expected that the FES will be redesigned, and the changes will be made based on these discoveries, and is this case, and whether we agree with this, and agree in a sense of like as we discussed before, and I just wanted to clarify.

DR. BUCKEL: That's an addition that I wanted here, was that our SEP members -- Many of them provided some guidance to Richard of literature to check into to help better inform, or maybe a new study to better inform, that the conclusions that it's telescoping error is correct, and so that would be something we would want to have a bullet on that, and Richard can speak to if that's something that they will be able to pursue or not, to your point about if they're just going to move forward with assuming that the bounding is the issue and they're going to take that as the --

DR. SHAROV: Right, and is it conditional based on what we will find out in 2024, or is it already sort of, you know, considered as a -- As, you know, an action plan.

DR. CODY: Ultimately, you know, NOAA leadership will make the decision whether they want to make the change in the survey or not. I mean, I would look at the one-month wave as, you know, as -- I mean, okay, we did some surveys to look at different sources of measurement error, but the focus of that really is to provide more frequent and timely estimates, and so there is that consideration.

If I had my way, I would implement it, but I think that there is still some decisions to be made, and those will be, you know, at the leadership level and how they want to proceed, because, you know, it is an increasing cost for the survey, to go to one-month waves, basically doubling the cost of the FES, and then there will probably be an expectation that there would be a commensurate increase in the APAIS sampling, the sample size, as well to go along with that, and so I think -- You know, I would like to go that way, but I can't say that that decision has been made, and, in fact, I would say that it hasn't at this point. It would depend on, you know, successful review of the calibrations, plus being able to complete the study, and then leadership signing-off on it, basically.

DR. BUCKEL: Thanks, Richard. Alexei, to that point?

DR. SHAROV: Yes, and, on the second part, I -- Well, the interim analysis for stock assessment would be helpful in assessing applications, and I am not sure if it would be helpful, and, I mean, in principle, yes, and we have already tried to do this in a quick around-the-table evaluation, and we could even play with one stock assessment or the other, but I think the most appropriate action would be to probably wait until, you know, we get a better conclusion of what the actual changes -- The final changes to which everyone would agree in the estimated effort and, therefore, removals are, as opposed to guessing.

I think it's very tempting to try to -- We have preliminary estimates of 20 to 30 percent of overestimation, and, first of all, we don't know if it's overestimation, right, and so we have to reduce it by 20 to 30 percent, and, yes, it's very tempting to try to immediately, you know, explore it in whatever species you work on, but we haven't even agreed yet whether these alternative estimates are the truth or not.

Then, as Amy mentioned, the calibration is not just simply linear. Therefore, it would be just wasting time, and this is not a -- Therefore, I think we shouldn't advise anything and just be patient and stay with what we have, the current FES, until further, more reliable conclusions are made.

DR. BUCKEL: Thanks, Alexei, and so we've had -- Some suggest, right, that interim analysis, or Kai mentioned to determine what the implications are of a 20 percent change, and there's different ways to do that, and one would be this approach, but just to quell concerns, versus Alexei, where we're just -- You know, give the reasons to the council why we feel to just stay the course until we get more information. Marcel.

DR. REICHERT: Real quick, to that point, I can see where Alexei is coming from, and I'm comfortable with that, because I realize that that may create more cans of worms than it may be worth, and so I'm happy to say that, and that may not be that helpful. Perhaps we can change that to -- I think it would be really helpful for us to get an update, maybe at the end of next year, or early 2025, to see where the study is, to see if we're still on track for that 2026 result, because I would be interested to see where they are and whether perhaps there were complications, or delays, and so I am willing to change that to an update, rather than an interim analysis, if the rest of the group feels the same way.

DR. BUCKEL: Kai.

DR. LORENZEN: I think that -- I mean, the reason, and I understand the concern that it's sort of opening a can of worms, if we do a sort of what-if type of analysis, but, at the same time, you know, I'm conscious of the fact that, of course, there is, you know, the perception, on the side of at least some of the stakeholders, that there is something really -- You know, really wrong with this, and that we need --

I think that, you know, there will be a lot of pressure to sort of hold off on -- You know, to kick things down the road, and I think it would be good to give people a somewhat realistic expectation of what implications would be of sort of changes in those estimates, because, you know, we're talking about three years before we maybe have the final answer, or probably more, you know, realistically, and, you know, if nothing really moves in that period, that's not a good situation, and I think it reflects an over -- Sort of a perception that the effect of any changes that will eventually be made would be much larger than they actually are likely to be, and so I think, if we do some analysis, it will help us gauge how large the implications might be, because it's not just for us, and I think we need to think about the bigger picture of, you know, the council process and the stakeholders. Thanks.

DR. BUCKEL: Wally.

DR. BUBLEY: Well, don't we run the risk of going in the opposite direction then? So what happens -- Because we don't know exactly how it's going to affect it, if we run some sort of

analysis like that, and then, all of a sudden, it shows there's a big difference, that's going to pretty much ensure that the council is going to push to have everything stopped, shut down, and, I mean, I know it's not -- We don't like to be in this limbo, but it could potentially backfire in that sense as well.

DR. SERCHUK: Can I comment, Chairman?

DR. BUCKEL: Sorry, Fred. I wasn't on the mic, and I was just saying we were going to break for lunch, but, yes, go ahead, Fred.

DR. SERCHUK: My question is what is a stock assessment scientist going to do? We're going to have assessments in 2024, and, you know, how are they going to be integrating any of the recreational data? That's the first question.

Do they just go with what they have, or we've been provided with, or do we say, oh, there are not going to be any assessments done in 2024, because we don't believe we'll get the necessary evaluation to address some of the biases, and so, first and foremost, I think the assessment scientists need to know if there are going to be any assessments done in 2024, and what are they expected to do with respect to integrating the existing estimates from this survey, because that will have a large impact, one, on the assessment, or it could have a large impact on the assessment, and it certainly will have an impact when it comes to whether -- For those stocks that are exploited both commercially and recreationally, how any breakdown will be provided to any allowable catches. I think the question, first and foremost, from an assessment point of view, is, you know, if we're looking for the future, and the next round of assessments will be in 2024, what do you expect the assessment scientists to do? Thank you.

DR. BUCKEL: Thank you, Fred. We will ask folks to chew on that, and the language we have, over their lunch, and we'll come back and continue tackling the agenda items. We're going to take an hour-and-a-half, and so we'll start back at 1:45. Thanks, everyone.

(Whereupon, a recess was taken.)

DR. BUCKEL: All right, everyone. Welcome back to the afternoon session of the South Atlantic Fishery Management Council's Scientific and Statistical Committee meeting. We are going to go back to our agenda items on the MRIP-FES and continue fleshing out our responses, and so Fred Serchuk had left us with a question that folks were pondering over lunch about what's a stock assessment scientist to do, and so I think we can address that.

My feeling, from the room and online folks, is that they would continue on status quo for now, if that -- I am seeing nodding around the room. If folks online don't agree with that, then chime-in. Steve Turner.

DR. TURNER: Mine is a slightly different subject, and so thank you.

DR. BUCKEL: Go ahead, Jennifer.

DR. SWEENEY-TOOKES: I just had a question, and I felt like maybe I missed something, but, up at the very top of the screen, it says the SSC agrees that the plan for further examining biases in effort is suitable, and I feel like I missed whatever plan it is that we're saying is suitable.

DR. BUCKEL: Yes, and let's get Steve's question, and then we'll come back to that, and so, Steve, go ahead, and then we're going to modify some of the language that we have on the screen.

DR. TURNER: Okay. Basically, I think it would be useful to say simulations of potential effects of decreased recreational effort estimates on stock assessments would be useful.

DR. CURTIS: Sorry, Steve, and can you repeat that? We had a lawnmower disruption.

DR. TURNER: Sure. Simulation of potential effects of decreased recreational effort estimates on stock assessments would be useful.

DR. BUCKEL: Thank you, Steve.

DR. TURNER: That might be part of that first bullet, replacing some of the text there about analysis, but it could go some other place.

DR. BUCKEL: Thank you. Marcel, to that point?

DR. REICHERT: Yes, to that point, and also an earlier point, but, Steve, would you be against saying "changes", rather than "decreased"? Changes in recreational effort?

DR. TURNER: Yes, and that's fine. You know, essentially, what everybody is worried about is decreases right now.

DR. REICHERT: Then a different point, going back to the previous one, and did we say, in our report, that there is likely less impact on the stock assessment than there is on management? I don't necessarily disagree, but I think this is a pretty important statement, and so I think we probably need to be very careful, or explain, what we mean by that.

DR. LORENZEN: I have a comment on the same point, and I'm not sure where it's came from, but it's correct.

DR. BUCKEL: I don't remember that being stated, and so, Judd, if you can go to that second sub-bullet under the second bullet. Does anybody remember making that statement?

DR. CURTIS: I think the discussion here was that -- The discussion was to talk about that there's a scaling mechanism, really, that's not going to affect a huge change in the stock assessment process, as you're monitoring in the same currencies, but that it could have more implications for management, vis-à-vis allocations and things like that, and so I think maybe some more elaboration on that.

DR. LORENZEN: Yes, and so I think -- So the allocation issue, I mean, essentially, if you rescale, there could be a, you know, rescaled allocation that would fall out of that rescaling, but I can see that, in the management process, it may not, and it may not work out like that, and people may

want to revisit the allocations more broadly, but, in principle, mostly I think we will see less effect in stock assessment, and management, than the magnitude of the adjustment in the catch estimates may suggest, and so we won't be seeing a 40 percent change in the actual -- It doesn't easily translate, right, but I think, you know, the magnitude in management, or effects on stock assessment and management, may not be as large as -- So yes. I'm not finding the right words, but I --

DR. BUCKEL: Judd has put something up there, Kai, if you want to check that out, while Marcel -- To that point?

DR. REICHERT: Yes, and, to be the devil's advocate, that may be the case, but, in some instances, it may be whether a stock is overfished and overfishing or not, and so, anyway, I just want to make sure that we are clear in what we mean, and so thank you. I think this text is a lot clearer than the previous one.

DR. BUCKEL: Yes, and "likely" is a good word there, and so now back to Jennifer, because now we're wordsmithing, and you had that -- I had a similar concern, and I felt like the SEP folks that are here, and online, had some really good advice to the MRIP folks on ways to look into all these -- There were lot of different biases names being thrown around, and so I think that bullet -- Where was that, Jennifer? I don't think we talked about a plan, but I would like the SEP folks that are here, and online, to provide some explicit advice on that.

DR. SWEENEY-TOOKES: Yes.

DR. CURTIS: Yes, and that's where that bullet stems from, and sorry to clarify, but I was just jotting things down, but, you know, the plan to run a more full-scale survey, after the results of this pilot study came out, is kind of the pathway forward that the Office of Science and Technology is pursuing, and the SSC seemed like that was a good approach, or they do not, and that's --

DR. SWEENEY-TOOKES: Again, am I misunderstanding that we're saying we should just move forward with what is place, as this new proposed version, without doing anything to examine biases, or am I misunderstanding, because the SEP members who were on the call raised a lot of really valid points, with suggestions about things that needed to be taken into account and should be adjusted before assuming that this will be accurate.

DR. BUCKEL: Amy.

DR. SCHUELLER: I was just going to agree with Jennifer, and I think that, if the plan is to move forward with the one-year study, I think that's just one aspect of it, and that there were a lot of comments, on a lot of different kinds of biases, that could be addressed, and modifications that could be done, in order to improve that, and so I think we need to make a note of that, and I took a lot of notes, which I haven't condensed, but I can condense and give some recommendations, based on what was said.

DR. BUCKEL: That would be great, Amy, to do that, and send those to Judd, and he has agreed to add to -- You know, we're going to switch over to black sea bass here soon, and then, folks that took notes on this, send them to Judd, and he is going to flesh those out, and then we'll look at those during a consensus statement reading. Kai.

DR. LORENZEN: I think what that one-year study will do is it will give us a better estimate of how different the two question orderings are, right, the results from those, but I don't think that it will tell us much more about which one is more accurate, and so there are all these other things that I think may need to be considered to get it there.

DR. BUCKEL: Yes, and so I agree with both of you, and Judd just modified that bullet, sub-bullet, and so check that out, and see if you want to change that at all, and, while we're looking at that, we'll go to Fred Serchuk online. Go ahead, Fred.

DR. SERCHUK: Thank you, Chair. I want to get back to my question about what is a stock assessment scientist supposed to do. My feeling is, even given all the issues that have arisen, I would like to see the stock assessment do exactly what he or she has done in the past, and that is go to the recreational data that's provided and use that, because we know that there are issues, both positive and negative, that may come up, and that would be, I think, the most prudent thing to do, rather than one stock assessment scientist doing one thing and another stock assessment doing another, is to do what they've done in the past in using those data, and I don't think that we should make any issues relative to management on that, because they're using the best available data.

Now, that available data may be biased, but we're not really quite sure what the magnitude of that bias is, or which way it will go, and I don't think the stock assessment scientists should have to bear that responsibility. When a better data stream comes along, when they make the necessary adjustments, after looking at it, then there will be a new dataset, but I don't think we need to put that responsibility on the stock assessment scientists at this time.

DR. BUCKEL: Thanks, Fred, for making that explicit. I think the folks around the room agree with you on that, but we've captured that language, to be very clear to the council and the assessment scientists.

DR. SERCHUK: Thank you.

DR. BUCKEL: Then Steve Turner I think was next, and then Kai. Go ahead, Steve.

DR. TURNER: Thank you. I will back off.

DR. BUCKEL: Kai.

DR. LORENZEN: So, I mean, maybe it would be a suggestion that -- I agree that the stock assessment scientists should use the best available data, and maybe do a sensitivity run with the, you know, recreational data, and Amy does not like that, but, you know, I don't see why that -- I mean, in a sense, almost maybe we should have a sensitivity run always for, you know, recreational catches scaled up or down by some amount.

DR. BUCKEL: Go ahead, Amy.

DR. SCHUELLER: I mean, I guess that could be an option, scaled up or down, but it's just like the natural mortality stuff scaled up or down, and I'm not exactly convinced that it's only going to be scaled and not changed in trend in some way, given the factors, like mode and state, et cetera,

and I just -- I don't know, and I hate to see us propose sensitivity runs that we don't actually know what they should look like, and we have nothing to support what they should look like with, because my feeling about the comments around the room today is that we don't have a good sense of which way the bias is, and we don't have a good sense of whether or not it will only be a scalar, or a change in the trend, or both, if there will be an interaction in that, and I just -- I don't know.

I mean, with natural mortality, we do up and down, because usually we're using some like constant value, and we're like, well, what if we're wrong, this way or that way, and it's a little bit more straightforward, and I'm just not sure I think this is straightforward, and, when you put a sensitivity run in, it adds, or lends, validity to it in some way that hopefully it's based on some thought process that is logical, and linear, and we can support, but I know that's not always true, too.

DR. BUCKEL: Thanks, Amy.

DR. SERCHUK: Can I make one other point?

DR. BUCKEL: Go ahead, Fred.

DR. SERCHUK: First of all, I agree with Amy, but there is a big difference between changes in natural mortality, which affect the stock, but don't affect stock allocations between sectors, and my feeling is -- The reason I said it the way it was is I don't want the stock assessment scientists to use a dataset and then talk about whether they believe it's up or down between recreational and commercial, because that's the next step, is going to be allocation, and I think, at this point in time, we're so uncertain that I would stay away from any analysis that suggests there should be a different allocation of the stock, based on different estimates of what the recreational effort and catch is.

We're not there yet, and I would like to remove that from the stock assessment at this time. It's too volatile of an issue for us to come back and say, well, the stock assessment scientists looked at it and said, well, it could be this low, or this high, for the recreational catches, and, therefore, the allocation should be this high or this low. That's too much of a burden to bear, with what we know about the analyses that are going to go on within the next year looking at the changes to the recreational data. Thank you.

DR. BUCKEL: Thanks, Fred. Let's see. We have Genny, and then Marcel.

DR. NESSLAGE: I would agree with Fred, and looking back at like page 23, there's estimates going in both directions, even though, for this pilot study, they were mostly biased in one direction, and this was a subset of states, and I don't know what the combination of the recall period, and the order of the questions, and how that's going to play out, and if there have been changes in shore, versus boating, which we saw during COVID, and, I mean, all sorts of things go on, and I'm not ready to -- I guess I'm not ready to jump into the scalar camp yet, but maybe we can make a recommendation that, once the new, revised protocols are being proposed, that that would be the time to do some of those analyses of what the impacts might be, and do sensitivities with the current assessments, but not until we know what the revised estimates are likely to look like. Otherwise, we're grasping at straws, as Amy just whispered to me.

DR. BUCKEL: Thanks, Genny. Marcel.

DR. REICHERT: I am still struggling, because it would give some idea, if you go -- You know, if you increase, or decrease, and do that in a sensitivity run, realizing that the sensitivity runs, currently, are a one-on replacement. That would give us, I don't know, but perhaps some information, and we always have the opportunity, as an SSC, or as SSC members that are involved in a stock assessment, to suggest additional sensitivity runs, if we, or the SSC members, feel that that's useful, or informative, on an individual stock assessment basis, and so I would rather go that route than perhaps recommending to do that for a series of stocks, as kind of an alternative.

DR. SHAROV: Myself and Fred sometimes, or more often than sometimes, are looking at things somewhat differently, but, here, I totally agree with Fred, exactly with his arguments, and so we have one year of the pilot study, with a limited number of states, with a limited sample size, and we don't understand which -- We have some idea, a hypothesis, of telescoping, and whatever else, which is reasonable, but no more than that, and we don't know whether the same trend, or the same differences, will be seen in 2024, whether they will be different among different modes, which they will be, but whether the range will be different, and whether the true reasons that caused this are constant and you can simply, you know, project it backwards, or there is a much more complex relationship, and, therefore, those differences between the two methods of estimation will result in different proportions, and, therefore, it will not be just scaling.

We don't know anything of this, and, therefore, although it seems attractive to do the simulation experiments, I don't think -- I mean, the sensitivities, but I don't think that they will be informative, and they will not give us any new knowledge, and having no indication that these differences, or trends, are true and they will continue, and all it could bring is further chaos and a lot of wrong decisions, that would have to be reversed, and so we just have to pass this, and leave this as the internal improvement of the survey in itself, until they figure it out, and then we'll have a firm result in two years, and then we could come back to this conversation.

DR. BUCKEL: Thanks, Alexei. Kai.

DR. LORENZEN: I don't want to dig in, but it's just, to me -- So I would like to do a sensitivity analysis, to see whether, you know, whatever I come up with is -- You know, how sensitive is that to reasonable variations and assumptions, and, if people are -- You know, if we have an indication that we may be looking at an underestimate, or an overestimate, or whatever, of the recreational catches, and whether it's exactly a scalar, or it's more complicated, but it would give me some comfort to at least have looked at what the implications would be if we did have a change like that, and, to my mind, it doesn't have to be -- I mean, by the time we have established exactly how much that is -- I mean, by 2026, it wouldn't be a sensitivity anymore, because then we would have a result. Anyway, my preference would be to have looked, and to have some idea, than to say I'm not looking, I'm not looking, I'm not looking, but anyway --

DR. BUCKEL: Thanks, Kai. Erik, online. Go ahead, Erik.

DR. WILLIAMS: Thanks, Jeff. Listening to the conversation, and you guys are having a really good one, and some interesting discussion, and I just want to make sure that I inject everybody's understanding of what a sensitivity run is, versus what an alternate run might be.

You know, a sensitivity run is, as Kai just described, just sort of looking at, you know, the delta in an assessment. When you change some input, you get X change in the output, but, if you want to take that the next step further, and actually turn that into an alternate state of nature, or a possible alternate solution, then you have to come up with the exact value you're going to use for that change in the recreational data, and so I bring this up because I think it might help crystalize everybody's thinking on this, and what would that value be from the South Atlantic, from this pilot study, and it sort of hints at what Alexei was getting at, and what value would you use for that, because I'm not even clear on that. Just be careful about, you know, being clear on the language on what you're asking, what you're potentially asking, the assessments to do and what you're going to use that information for, and that's all I ask. Thanks.

DR. BUCKEL: Okay. Any other comments to this point about a sensitivity run, or an alternate state run? It seems like maybe the -- It seems like the bulk of the folks are not in favor of it, and there's still some discussion about that there could be some benefit, but there was something maybe in the middle, and was that Amy, or Genny, that said, well, after we get a better handle, maybe in a year, then that could be -- So maybe that's a compromise, and I don't know what folks think about that, but -- Or we could just say we're just going to wait until -- Go ahead, Genny.

DR. NESSLAGE: So I see the value of running it with the current estimate, and let's say they're biased estimates in a certain percentage, just to show for which stocks, and we wouldn't need to worry anything about, and which we wouldn't, assuming that it was a simple scalar, which most of us are not -- Many of us are not convinced it would be, but let's just say it was.

Even if it was a simple scalar, I think you're creating a -- Until we actually get a new data stream, you're creating more problems for management than you are solutions, but that doesn't mean that -- When this gets rolled out, it needs to be done in conjunction with the Center and not MRIP just suddenly publishing new numbers and throwing them at people and having everyone panic, as is often the case, and it would be great if there was some coordinated effort to have, okay, for the key stocks that everyone is really worried about, what are the potential implications of these new numbers that are finalized, after they have figured out what the calibration is, yada-yada, before it gets sent to the public, and to us even, because, at that point, then we know what we're talking about. Is this freak-out time, and we have to redo our assessments, and all of our measures, or is this minor tweaks, and so maybe it's recommending a coordinated effort. There we go. Thanks, Judd.

DR. BUCKEL: Kai.

DR. LORENZEN: I absolutely second that, and that was really kind of the point of my first comment, I think, today, that really I think, you know, we need that, and there needs to be something out there that helps people understand what the implications are, and we can do that now, even if we don't know what the numbers are, so we can -- No? Okay, but -- Well, I mean, just the principle understanding of what a change in that -- Anyway. We disagree on that one. I always like to think ahead.

DR. BUCKEL: Amy.

DR. SCHUELLER: As an assessment scientist, I run loads of back-pocket sensitivity runs that I never show anyone, and I think that's okay, but I am very careful about what's getting put into the

documents, because -- Just let's face it. Politically, what gets put in there can get picked up and be used in a way that you didn't intend to, and so I just think it's prudent to be careful, because, I think, once it hits a printed document, it's like somehow there is more certainty in it than probably you mean for it to be, and it might have just been for fun, right, and for you, so you understand your model behavior a little bit better, but, just from my own experience, sometimes you just keep things in the back pocket, because it does open cans of worms that you really can't contend with, because you actually don't know what the answer is.

DR. LORENZEN: But then, you know, people open cans of worms all the time, and sometimes you may have a sensitivity run in your back pocket where you can say, actually, this doesn't matter as much as you think.

DR. SCHUELLER: Sometimes.

DR. BUCKEL: Alexei.

DR. SHAROV: I think we've almost exhausted this discussion, but the potential results could be rather different, and it's going to depend on what is the current status of the stock, given current estimates of recreational removals, and is it close to the overfished, or is it overfished, and what is the proportion of recreational removals relative to total, or what is the variation between the recreational and commercial, and, yes, there is one possible outcome where you would run your sensitivity with this assumed 30, or 20, percent of increase in recreational removals, and you will show that it will not make much of a difference to the stock, and, hence, you can relax.

There will be many other potential options where this will not be the case, and what all the consequences of, you know, following through the further discussions and panic by the public and whatever else, only to find out, the following year, that things are actually not as bad, because, well, the new estimate has come, and so there is -- I mean, the advantage of, you know, maybe 10 percent of the stocks where you could have a conclusion, a firm conclusion, that this doesn't have an effect, and all the other options would be more trouble, rather than help, and so I will not repeat my arguments for the third time. Thank you.

DR. BUCKEL: All right. Thanks, Alexei, and I think we've gotten to a good point, where Judd can take notes from others, and integrate those, before we look at the consensus later this week. Judd does have one --

DR. SERCHUK: Can I make one other comment, Chair?

DR. BUCKEL: Go ahead, Fred.

DR. SERCHUK: I am sorry to beat a dead horse, but sensitivity runs look at changes in natural mortality rate, or sensitivity runs that look at changes in growth rates, and so on and so forth, and they apply to the stock as a whole and don't necessarily benefit one user group or another user group. The recreational data will actually have a very direct management allocation effect, and, because of that, I think this whole thing about sensitivity runs should be stricken.

The good assessment scientists, as Amy pointed out, will do sensitivities, but I think this one raises a red flag, in terms of allocation, and I think we're not ready to get there yet, because we're very

uncertain about some of these sort of things, and so I don't even want to see it in our notes here, quite frankly, and that's the reason I raised this thing in the first place, and it wasn't because I'm not a proponent of sensitivity analysis, and we do it all the time, but we do it on a stock basis, which doesn't -- Which has effects in terms of the entire allocation and not among user groups. Thank you.

DR. BUCKEL: Thanks, Fred. Judd had that highlighted, and I'm just going to ask if folks were comfortable with deleting the first part of what you have highlighted. Does that first two sentences and --

DR. LORENZEN: Deleting sensitivity runs with biological parameters has nothing to do with our discussion, and so you're saying don't do sensitivity runs?

DR. BUCKEL: Don't do the sensitivity run with the --At this time, don't do a sensitivity run with a decreased effort, and so a decreased catch. Fred was just saying that -- He was making the point that the sensitivity runs that are done are done on biological parameters that affect the stock as a whole, while the rec data are sector-specific, and he was arguing against having the statement that the SSC is recommending sensitivity runs with this pilot data result, using that to reduce recreational catch, and to wait, to be in a holding pattern, on that, which I think is what the room is leaning towards, or as the majority have stated.

DR. CURTIS: From a documentation standpoint, I guess the question is do you want to just strike this entire bullet on sensitivity runs from the consensus statements, or do you want to have something that -- Towards that the sensitivity runs should wait until the full study has been completed, et cetera?

DR. BUCKEL: I think that's the next bullet, coordination between OST and Southeast Center, when full study is completed, is imperative for integration of new rec data, and that was offered up as a way forward. Genny.

DR. NESSLAGE: I am fine with deleting that if we add a little more detail to the next button, bullet, button, whatever, and coordination between OST and -- When the full study is -- Coordination between OST and the Center regarding demonstrated impacts and potential consequences to both assessment and management of key stocks is imperative when new rec data are to be integrated into the stock assessment process, or there will be mass confusion, and did you get all that? Are you ready?

Coordination between OST and the Center on -- Oh god, what did I say? Demonstrating the impacts to assessment and management for key stocks of the new data streams, something like that, and this is when we need the playback of these recordings. For rollout of the new rec data for use in stock assessments, because, all of a sudden, it's going to be plopped in our laps, right, and it will be BSIA, and we'll need to deal with it, and it will be nice to know, and the first question is going to be from the council, and do we need to change the assessments, and do we need to change the ABCs, and having that answer ready, so they know what the magnitude is, whether they need to redo the SEDAR schedule or what have you, and that's going to be key. Otherwise, people are just going to panic, regardless, and maybe not necessarily needing to. I am not helping with wording, and I'm just adding more words.

DR. BUCKEL: Go ahead, Kai.

DR. LORENZEN: I mean, those sensitivity runs are part of what would help us prepare, and this is why I'm not comfortable with getting rid of that, because I would -- You know, in a few years time, we would look back and say, oh, nobody had the idea that maybe we should do some sensitivity runs, and so we've been like spending the last three years not checking it out.

DR. BUCKEL: Amy.

DR. SCHUELLER: Would you be satisfied if we moved that sensitivity statement underneath of that bullet? I mean, I don't -- I think that the sensitivity runs should be part of the rollout, but not prior to the rollout, because we don't even know what they will look like. I mean, I think it's fine to say sensitivity runs with alternative recreational data time series, with the new recreational data time series, should be included.

DR. BUCKEL: All right. Thanks for that compromise, Amy. Are folks okay with the compromised language? Do we have consensus, or close to it? We'll be able to revisit this on Thursday, if not before. Go ahead, Marcel.

DR. REICHERT: Maybe someone can clarify this, but, once we have the new recreational data time series, we don't need sensitivity runs anymore, because that's then going to be included in the stock assessment, and so I'm a little confused in what our intent is of this bullet point.

DR. LORENZEN: That was my original argument, that, once that data is the word, then, yes, it's no longer a sensitivity run. I would quite like to have some idea of what the implications will be in the future, if there is a change, and I'm quite happy with a sensitivity run as one way of exploring it, but I don't know, and we are just repeating ourselves, and we can maybe find some other way of saying it, but I do think that I would not be comfortable with not mentioning any sort of exploration, or sensitivity, analysis in any of this, and so, if we get rid of that, then it would all be just, okay, we'll wait until this study is done, and then the new data will appear, and then that is BSIA, and then we'll see what happens.

DR. BUCKEL: Okay. Judd, maybe have a comment there to revisit that, and folks can think about that some more before we come back, and so, that way, we can move on to black sea bass. Any last comments on MRIP-FES? Christina.

DR. PACKAGE-WARD: There's the statement in there addressing assessments moving forward with the MRIP-FES, but what are the implications for ongoing, or planned, management actions? I don't know if we need to address that.

DR. BUCKEL: What bullet are --

DR. PACKAGE-WARD: As far as the up above, the statement about stock assessments proceeding with MRIP-FES data streams, and I guess I'm just thinking about the impacts to management actions, as far as using MRIP-FES or -- I know there are some species that we haven't even converted to FES yet.

DR. BUCKEL: So just MRIP? Would that solve that, instead of "MRIP-FES"? Is that what you're -- The concern is that some might still be Coastal Household?

DR. PACKAGE-WARD: Yes, I guess so, and just, when we're taking a management action, and converting to that, I mean, it can affect allocation and thinking about, I guess, the differences in projections and estimates, if that makes sense.

DR. BUCKEL: Yes, and so that edit -- Great. Thanks, Christina. All right. The next agenda -- Fred Serchuk. Go ahead, Fred.

DR. SERCHUK: Sorry, Chairman, but I want to get -- There's a comment that was made by Genny about the thing about Maine, and the Andrews et al. paper never mentions Maine in the text, and it always mentions Maryland, and so the only issue that I see is that the graphs, the figures, have been mislabeled, but I think the text itself never refers to Maine, and so I think the issue that I see is a labeling issue in the graphs, rather than any issue with the interpretations that are made in the text, but I think it's less of a concern, but it is a concern that the graphs, and the figures, mention Maine, where it's never mentioned in the text. Only Maryland is mentioned in the text. Someone who edited the text probably overlooked this inconsistency, but I don't think it speaks to the validity of what's written. Thank you.

DR. BUCKEL: Okay. Agenda Item Number 4 is the black sea bass operational assessment, and this is something we talked about at the April and July 2023 meeting, and there was several questions from the assessment scientists on how to move forward with the projections and reference points, et cetera, and so there was a dedicated black sea bass workgroup that met in September and provided recommendations to the Center, and Matthew Vincent has a presentation to talk about what he's done with the black sea bass projections and to go over what the workgroup decided in addressing his questions that he brought to us before, and so, Matthew, if you're ready, I think Judd is going to give you the power.

DR. VINCENT: Okay. I'm here.

DR. BUCKEL: Thanks. Before you start, Matthew, just folks take a look at the spreadsheet and see if you are a notetaker for this item. Sorry, Matt. Please go ahead.

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DR. VINCENT: All right. Thanks. I'm going to present on the black sea bass projections, and we'll start out with a review of what the SSC made recommendations for, based on the assessment, and so they -- You guys recommended to change the interim years, and it was previously being calculated from the recent catch average, but you suggested changing it to the average F over the last three years, and that has been done, and then there was comments about changing the reference points from what had been called a FMSY, but it's actually a maximum landed yield, but changing that to an F of 0.1, and we'll talk more about that, and we actually changed it to a different reference point, based on discussions from the working group.

Then there was also a recommendation to allow for the discard fleets, the fishing mortality to remain at the recent levels, or to allow it to increase, and then there was a couple of different

recommendations for the recruitment projections, either to use the recent average, the long-term average, or exploring some sort of way to go from the recent average to a long-term average, and the wording was a sine wave, but we've done a different methodology, and I will talk about that here.

Then there was also to incorporate information on the landings and the discards from 2022 into the projections, and then there was two specific projection scenarios that were recommended to be run that -- Well, we've changed the reference points, but these have been run.

Moving on, one of the recommendations from the SSC report, from the assessment, was to investigate alternative calculations for the spawner-potential ratio. In the assessment, this SPR was calculated based on the eggs, or female fecundity, and the conclusion was that this might not be an appropriate metric, given that these are hermaphroditic species, and, once they have been converted to males, they aren't included in the SPR, and this can allow for the overfishing of the males.

Then an additional thing that was found was that the MSY that had been presented in the assessment isn't actually an MSY, and this is because the calculations don't have any density dependence, because we used a mean spawner-stock recruit relationship, and so the resulting curve is actually just your yield-per-recruit analysis, and the reason why it had a maximum was because it only accounted for the landed yield, and it didn't account for the discards, and so the recommendation was to calculate the projections using an F 0.1, which is 10 percent of the slope of the yield-per-recruit, as an alternate reference point.

However, since the assessment was completed, I was able to recalculate the spawner-potential ratio in different metrics. As I previously stated, the assessment had used the number of eggs as the SPR, and this is the black line shown in the figure on the right. What has commonly been used for other species is the blue-dashed line, which is the mature weight, and it's the sum of the mature males the mature female weight, and this is often used for other protogynous species, but it has the potential to -- If you remove -- You can remove all the males and still have a fairly high SPR, if you have a large selectivity that targets just the male population, and so I came up with an idea to use the product of males and females, if there is the potential for sperm limitation, because this would allow for a decrease in the SPR.

However, this was just some ideas that I came up with, and it needs further research of whether there actually is sperm limitation in the species, and so, as a result, the working group decided that there really wasn't any evidence for or against the sperm limitation, and it's really unknown, because the spawning isn't well documented in the species, and so there is concerns -- There was also concerns that the importance of the males would be overemphasized using that product of the males and the females, and it hasn't been really used anywhere else, and so it's an untested metric. Therefore, the working group decided to use the mature weight, based on the precedent from other SEDARs, such as the scamp assessment, and they also recommended using the 40 percent SPR, whereas the -- I know the regulations have it set at 30 percent SPR, but there has been additional research since then that suggests a 30 percent SPR may not be feasible for most species.

This left four different reference points that could be used to calculate the stock status. There was what was recorded at FMSY, but it's really a maximum landed yield, which is given by the green solid line in the figure on the right, and then there was also -- You could calculate the F 0.1 based

on the yield, or the landings, curve, which is the left-most figure, or you could calculate the F 0.1 based on the total landings, or the total removals, which is the combination of landings and discards, which is shown on the far-right. Then the final one, which we've already talked about, was the F 40 percent, based on the SPR calculations, using the mature weight spawning stock biomass.

The decision from the working group kind of came in stages. They first decided that any reference point should be based on including both the landings and the discards, because these are options that management can adjust, and so they decided that this would remove what was reported as the FMSY and the landed, or yield, F 0.1, and this just left the total F 0.1 and the SPR metric, and so the working group decided that the F 40 percent for the SPR metric was likely to be more related to the reproducibility, or the replenishment rate, of the stocks than using the yield per recruit or the F 0.1 metric. As a result, the working group decided to use the F 40 percent mature weight, based on the scientific literature and then the precedents set by other SEDARs, such as scamp.

From this, I recalculated the stock status, and so all I did was change -- I took the abundance at-age estimates from the assessment, and I just recalculated what the spawning stock biomass would be, just based on the weight of the mature individuals, instead of being calculated as eggs, as had been previously done, and this changed the stock status to being overfished, and so about 70 percent of the MCBE runs were suggesting that the stock was overfished, whereas the base model, and about 63 percent of the MCBE runs, suggested that the stock was not currently undergoing overfishing, but, as you can see, it's pretty close to the line, and about 37 percent suggest that overfishing may be occurring.

This is viewing that in a different way. On the left, we have the spawning stock biomass in 2021 relative to the MSST, and, on the right, we have that SSB relative to the SSB at F 40 percent, and you can see that 100 percent of the models are below that SSB at F 40 percent, but only about 30 percent are below the MSST, or sorry, are above the MSST, whereas, in terms of the fishing mortality, and we already talked about that, with 63 percent being about -- Suggesting not overfishing, and only 37 percent suggesting that overfishing is occurring, but there is quite a wide range in that level.

This shows the table, and this was just presented as a reference that you guys can look at and reference as needed, as well as the next table, which showed the F 30 percent, because it was recommended that this be included for managers to be able to look at and compare the F 30 percent to the F 40 percent.

During the working group discussion, one of the decisions that was made was to conduct -- Or it was to do the projections using P*, and there was two possible P*s that were discussed. Using the previous rule, they calculated that the P* would be 35 percent, whereas, under the new rules, they suggested that it would be 30 percent, and so we ran the projections using both of these P* options, and, since the population is overfished, the stock would enter into a rebuilding plan, and so the probability of rebuilding would be one minus the P*, and so this would be either 65 percent or 70 percent, depending on which rule was chosen.

Based on the recommendation to include data from 2022, we decided that -- We found that there was a couple of different ways to fit the landings and the discards, and the way that we ended up settling was to fit all of the landings and discards separately, and so we took the selectivity based

on the terminal year of the assessment, and then estimated the F value for each fishery, but set the maximum fishing rate for each fishery to a value of five, to prevent very unreasonable numbers, and that gave us our estimate of fishing mortality in the terminal year of -- Or in one of the interim years of 2022 and projected the abundance into 2023.

Then one of the recommendations was to -- It was to use the last three years for the F current for the interim years, and so the question was whether to use the average from the assessment, being the 2019 through 2021, for the two remaining interim years of 2023 and 2024, or whether we should recalculate this F current for these interim years, based on the average of 2020 through 2022, including this new F value.

The working group kind of decided that we should probably just use the F from the assessment, the F current from the assessment, for these interim years, but then do a sensitivity that recalculates it, that incorporates it, into that average for 2023 and 2024, and, if anyone wants to see these, they look pretty similar to the scenarios that are presented, and so these are an option that can be used, if desired, but I haven't shown them, because, as it is, there are already quite a large number of scenarios to show.

Okay, and so on to the different options for the projections, and the first thing that I will talk about will be the three different recruitment options, and so the R0, the rec mu, and the AR, these are the indicators that will be at the top of the slide, indicating the different recruitment assumptions that are presented on that slide, and so R0 is the long-term average, and the associated standard deviation based on that, the fit to the entire time series, whereas rec mu is the recruitment based on the recent average, and so that's the 2014 through 2019 and then the standard deviation of this time period, and then the final one is the AR, which we fit an autoregressive AR1 process to the time series of the log recruitment deviates, and then the projections followed a random walk, based on these fits to the error process, and we started this random walk from the recent average, starting in 2021.

This was an alternative to the sine wave that was presented for scamp, because it allows for us to start at a low level, in the recent years, and then to gradually increase towards the long-term levels that we had seen historically.

Then the other option was for the discards, and so what I've labeled as "Dprop", or D proportional, and it sets the discards proportional to what the F in the landings is, and so this is mostly used for setting all of the fishing mortality set to zero, whereas the D current sets the fishing mortality based on the current F average, and then the selectivity from the weighted selectivity for the discards, and so this allows for the discards to be at the recent levels in the projections.

Then we had different levels of fishing mortality, and so this could either be at a level of zero, where we had no fishing mortality, and, if this is used in combination with the D current, the F0 is only applied to the landings, and you still have fishing mortality that's applied to the discards, and then we have an F_R 65 percent, which is a 65 percent of rebuilding within ten years, which uses the fishing mortality on the discards, based on the current level, and, similarly, we have a rebuilding to 70 percent within ten years.

Okay, and so these are the eight different scenarios that we'll go through. The first three scenarios are the rebuilding scenarios based on the three different recruitment options. The next three

scenarios are similar, but they have the discards based on the current levels of fishing mortality, but the landings are set to zero, and then the final scenario is the long-term recruitment with the recent discards, and then with fishing mortality on the landings that allows for rebuilding to 65 percent or 75 percent.

The first scenario, with long-term recruitment and absolutely no fishing at all, at the top, we have the fishing mortality. In the middle-left, we have the spawning stock biomass trends, and then, on the bottom-left, we have recruitment. On the right-middle, we have the number of removals, and, on the bottom-right, we have the number of discards, and you can see that management was implemented starting in 2025, and we have that F interim years in 2023 and 2024, and pretty high levels of F that are being fit to the catch estimates from 2022.

For this scenario, you can see that the population rebuilds quite quickly, and there is quite a wide range in our recruitment deviates for this scenario, and so this scenario suggests that the population can rebuild to above the SSB F 40 percent with -- Under ten years, and so, however, when we look at the scenario with the recent average recruitment -- If we look at the spawning stock biomass in this middle panel, we can see that it doesn't really ever reach to the long-term average values, and our recruitment deviates are much lower than they were in the previous scenario, and, as we can see, the probability that the stock can reach these long-term average reference levels is only about 30 percent within ten years. However, this scenario implicitly assumes that we've had a regime change, and there currently isn't sufficient evidence to make this assumption, and so just keep that in mind.

Then the third scenario was using the autoregressive random walk deviates for the recruitment, and we can see that there is more of a gradual increase, and it doesn't -- The spawning stock biomass doesn't increase quite as quickly as in the scenario with the long-term average, and we can see that the recruitment deviates gradually increase here over time, as it gets further away from the recent years. Based on this, we can see that the probability of rebuilding is still very high, and it still can be done within ten years, and it just takes a little bit longer than the scenario with the long-term average recruits.

Moving on to the scenario that has long-term average recruits, but allows for the discards at the recent levels, and, as you can see down here, the discards remain -- Actually, they go up, because the population goes up, but the landings are still at zero, and you can see the population rebuilds, but it rebuilds to a slightly lower equilibrium state than the state with no fishing that we previously saw, but, based on this, we can still see that the population still exceeds the 70 percent probability of rebuilding, and it's still within ten years, and so, based on this assumption, we could have the current levels of discards, and possibly allow for some landings of the fish, if recruitment is able to return to this level right away, but that is highly uncertain.

Based on the scenario with the recent average recruitment and the recent discard mortality, we have similar -- It looks pretty similar to the scenario without the discard mortality, and it's much below the long-term average, and, in this scenario, there is pretty much only single-digit probabilities, maybe like 2 percent probabilities that it's ever able to rebuild, if this recruitment allowed -- If the recent average recruitment remains and discards remain high.

Then we have the scenario with the autoregressive recruitment and recent discarding levels, but landing is still set to zero, and recruitment looks pretty similar to what the previous scenario with

the AR recruitment was. However, our spawning stock biomass seems to not quite exceed the long-term average reference points quite as quickly, and it just barely gets above it. If we look at the probability of it exceeding, or being rebuilt, within ten years, it's only getting to 60 percent of the MCBE runs are exceeding the spawning stock biomass at F 40 percent, with the current discard levels.

Okay, and so, moving on to the scenario where we have a rebuilding, or long-term average recruitment and recent average discard mortality, but with a 65 percent probability of rebuilding, we can see that there is the opportunity for some removals, and they're almost -- Well, they are close to the level of -- They eventually get close to the level of the reference level of fishing mortality, but the discards are actually much below what the long-term reference levels would be, using the current level of fishing mortality on the discards.

As you can see, it reaches that 65 percent probability of rebuilding within ten years, and that's kind of where it equilibrates after ten years, but it almost reaches it within five years, and then the scenario for 70 percent rebuilding looks pretty similar, but your amount of removals is actually a bit lower, compared to the scenario with 65 percent, and then it rebuilds to 70 percent probability within ten years, as the scenario name suggests.

Okay, and so the summary of the spawner-potential ratio was that we decided to use the mature weight of males and females, and then this resulted in a status of the stock being overfished, but not currently undergoing overfishing. However, the status for both fishing mortality and stock status is less certain than what the assessment report had suggested, based on what was termed FMSY, and so there's more uncertainty of whether overfishing is occurring or not than the previous assessment, or from the conclusions from the assessment report, and then there's also that further research is needed on whether sperm limitation is occurring in black sea bass and if the males and females -- If some of male and female weight, mature weight, is an appropriate metric for the protogynous species.

Then, based on the projection results, they're highly dependent on the assumption of long-term recruitment, or the assumption of what the recruitment was. If we use the long-term average recruitment, or the auto-correlated recruitment, the projections suggest that the population can rebuild within ten years, but, if we use the recent average recruitment, the stock can never rebuild to the reference points that are based on the long-term average, and, as I said previously, this scenario makes the implicit assumption that a regime shift has occurred, but there isn't sufficient evidence to make that conclusion.

At current levels of discarding, and assuming an autocorrelated recruitment scenario, the population is never able to rebuild to either 65 or 75 percent within ten years. However, if we assume the long-term recruitment, it can rebuild, and it allows for a moderate amount of landed harvest, as well as current levels of discards.

This leaves us with needing to select a scenario to calculate the ABCs and OFLs, and I have presented a couple of possible scenarios, and I've highlighted, in red, the scenario that was kind of suggested, based on the recommendations, and so this would use the recent average, the recent discard levels, and then the F at a P* multiplier of F 40 percent. If we select this one, we would need to decide what the appropriate P* is, whether we're going to use the 35 or 30 percent, and I have calculated both of these projection scenarios, but I haven't presented them, just for the sake

of time, and then, for the OFL, based on the projections that were selected for scamp, it is suggested to use the long-term average recruitment, with the current levels of discards and an F 40 percent.

As the slide says, there are additional scenarios that I haven't presented, that I could hopefully use -- That I could show if necessary, and I could potentially run a couple more before the end of the week, in order to get these off to the council, and so, with that, I will open it up for questions.

DR. BUCKEL: Thank you very much, Matthew, and so a lot of work in a short period of time, and we greatly appreciate that, and thanks too for the clear presentation, and so I will open it up to the group for clarifying questions for Matthew. Alexei had his hand up here. Go ahead, Alexei.

DR. SHAROV: Thank you. Matt, thank you for a very, very detailed description, and thank you so much. I have two questions. One I think is very important, it's principle, and so, in choosing the reference point, the group decided that the SPR-based reference point is most appropriate, because it reflects the most, or the productive, capacity of the stock, and I agree, but you also agreed that there is no indication, and there is no proof, no information, whether there is a sperm limitation present, or whether it exists in the case of black sea bass, or it doesn't, and so it's unknown.

In that case, what's -- Why would you use the combined weight of males and females if, effectively, you're saying that males are not important, or we can't say whether their contribution to reproductive capacity is important or not, and, related to this, what I've been always told by the biologists that is, in the case of black sea bass, females turn into males when males are being removed through fishing. Additionally, females turn into males, and so the fishing mortality is increasing, and we take, you know, both males and females, and so, if males are disappearing as a result of fishing, according to this concept, females are moving from the pool of females and moving into the pool of males, and so, therefore, with increasing F, the decline in the number of females will be faster, and so, in a high F, the faster the spawning stock biomass of females specifically declines.

Ultimately, there, the ones that are producing eggs, and, if there is no indication that males are insufficient to inseminate, and, therefore, with this approach, is there a risk that we're overestimating the productive capacity, and would it be still better to stay with the female SPR, and I'm sorry for bringing you back to that discussion level, but I think it is important.

DR. VINCENT: So your comment about the transitioning from females to males, in the absence of the males, these calculations don't specifically account for that, and so it's just the transition based on an age vector, and a probability based on that, and so, in these calculations, you aren't able to account for that, and so I don't think that -- So that's not included in these calculations.

Then there was also -- So your recommendation was to use just females, instead of males and females, and there is a paper, by Brooks et al., that suggests using the sum of both males and females, that it's more appropriate to use for all -- For protogynous species, for most scenarios, under different levels of sperm limitation, and that -- They recommended away from using either of the sexes individually, and so that was part of the rationale for using the sum of the two sexes, and so I guess, when I say there is no evidence for sperm limitation, I'm just saying there's -- I don't think we know enough, either way, about the population, whether there is or isn't any sperm

limitation, and so we didn't have any evidence in either direction, and so I think the use of the males and the females summed together is a middle ground compromise, I guess.

DR. SHAROV: Okay. Thank you, and a second question is, when you calculated these options, and you're using the level of recent discards, are the discards calculated as a value of fishing mortality, or a fraction of fishing mortality, or just instantaneous mortality, or is it the fixed number of fish being removed?

DR. VINCENT: So it's based on the fishing mortality, the recent F level, multiplied by the selectivity that is associated with the discards at the current size structure, or size limit levels. So it's an F level that's multiplied by the selectivity of the weighted discards.

DR. SHAROV: Okay. Right, and so it's a removal rate, whichever way it's calculated, right?

DR. VINCENT: Yes.

DR. SHAROV: I see. All right, and so then, if, in your simulation, the stock is recovering, the estimates of discards are increasing as well? They should be, correct?

DR. VINCENT: Yes, and they generally do. Let me look at it.

DR. SHAROV: All right. Sounds good, and I'm just checking on that. Thank you.

DR. BUCKEL: Thanks, Alexei and Matthew. Fred Serchuk.

DR. SERCHUK: Thank you. I want to commend both the working group, and Matt in particular, for the really super job that they've done, in terms of this scenario analysis, and I have a rather simple question. You probably know that we are seeing, up north, black sea bass in the places where we haven't seen them before, because the waters have been warming up, and I'm just wondering, and are there any -- I'm sure the waters are warming up down in the South Atlantic as well, and I am just wondering, and has there been any indications that the increases in water temperature will have a positive or negative impact on the spawning of particularly black sea bass, because, you know, I think that we need to look at what's happening with our environment.

We're seeing, I believe, temperatures that we haven't seen in recent memory, in many of the waters, and that will have an impact on the biota that live in these waters, and one impact could be that they either don't grow the same way they did, or they don't reproduce the same way they did, and has anyone looked at that, in terms of possible impacts of warming of the environment on either growth or natural mortality or reproductive ability, particularly for black sea bass, because I know that black sea bass are moving from the Mid-Atlantic up to New England, because the waters there now are warmer than they otherwise would be, and it's a more favorable habitat now for black sea bass?

DR. VINCENT: I'm not sure of any specific research. I know there's some proposed research, relating to the recruitment and regime shift stuff, but I'm not aware of any that have looked at like thermal limits or anything like that.

DR. SERCHUK: Okay. I mean -- You know, I think you've done a great job with what you have, but I'm just concerned, particularly when we talk about productivity and recruitment increasing, when I think there might be some environmental issues going on that may mitigate against that, and I have no documentation in front of me, but I do know the waters are warming up, and, how that affects certain organisms, you would have to ask people that are familiar with the species, but I don't think it can be overlooked. I think it has to be at least assessed. Thank you.

DR. BUCKEL: Fred, we have not seen the water temperature increases in the South Atlantic like you've seen up there, and they have -- It's been recent years that there's been an uptick, but it's just been in more recent years, and not at the magnitude that you've had up there, but it is still important research, because we are seeing the warming starting in recent years, and, Mike Schmidtke, did you have something to that point? Go ahead, Mike.

DR. SCHMIDTKE: Fred, this isn't necessarily research-oriented, but it is part of our stock assessment process, and we do go to the fishermen and gather information from them and put it in a fishery performance report that goes to the assessment analysts, and is part of that process as well, and one of the comments that got brought up, when we completed that fishery performance report, was that there was some inter, or intra, region, within our region, differences on what they're seeing in black sea bass.

The Florida fishermen commented that they had seen a pretty stark decline in black sea bass, whereas the North Carolina fishermen, for example, they didn't see a similar type of decline in their black sea bass availability, and so there seems to be some type of effect going on within the region. Now, what the mechanism for that would be, that's for research more to discover, but it seems to have -- To be playing some type of part.

DR. BUCKEL: Thank you, Mike.

DR. SERCHUK: Thank you for that explanation.

DR. BUCKEL: Wally and then Genny.

DR. BUBLEY: Just touching on some of the questions that Fred was asking, looking at the data from the SERFS index, we're not really seeing the clear change in temperature that we could attribute to anything related to any of the life history characteristics. We are working on a paper, currently, that's looking at some distribution changes, potentially, but I don't think there's going to be a strong relationship with temperature in it, and it's not -- I think it's not necessarily the movement of -- If the center of the population is shifting, it's not necessarily due to temperature, and it looks like there could be some fluctuation, and so that's still in the process, but I don't know of anything firmly that is showing a change in life history characteristics of black sea bass in this area.

DR. BUCKEL: Thanks, Wally. Genny.

DR. NESSLAGE: I was wondering if you could explain the slide, page, whatever, 13, for me, and are you basically saying that your F estimates were running away, and so you had to bound them at a max rate of five, and is that correct, and the max you achieved was three?

DR. VINCENT: For some of these scenarios, with very low biomass at the end of the time series, it resulted in very -- In order to get the landings and discards from the current estimates in 2022, it had to have very high fishing mortalities, and sometimes they were unreasonable, and so we set a maximum at five, and so the figure on the right -- This is just what the estimate from the base case was, and so that had an estimate of about three, but we set a maximum of five for each fishery, and so this often -- If one of them -- I think the recreational landings was often the one that went to the highest rate, and then the one that was -- Often the second-highest was the recreational discards, and so this allowed for the overall maximum to be close to about ten, or something like that, based on what previous projections had done.

DR. NESSLAGE: So I don't mean to open a can of worms that the workgroup already closed, and maybe you guys can explain to me why -- It seems like that estimate then is more suspect. Is this because the 2022 estimate is driving -- Sorry, and I'm not following all the details on this.

DR. VINCENT: Okay.

DR. NESSLAGE: Can you just clarify what's driving the -- Which pieces are driving the high Fs in the terminal -- Whatever years they are.

DR. VINCENT: Yes, and so it's the landings and the discards are put into the -- You find an F that allows for that catch, based on the abundance estimates from the end of the time series, and that's projected into 2022, and then we calculate the F that -- Or estimate the F that gives us the fishery-dependent F, and then some of the Fs across the different fisheries, based on the different catch in landings.

Then, when we were doing the estimation procedure, we set a maximum for each fishery to a level of five, and so this allowed for like an overall maximum that would be close to -- Often, it would be the recreational landings and the recreational discards which would be at that upper bound, and it would be close to that upper bound, if they were at all, but, across the average of the scenarios, we had a very high level, at about three, but only some of them ever actually reached that, but it prevented them from getting to being outrageously high levels. Does that answer your question?

DR. NESSLAGE: I think I'm following what you did, and I'm just concerned that that's an indication that something is off somewhere, because those are really high Fs, and so maybe the terminal year estimates are biased, and maybe the catch estimates post-terminal year are off, and I'm not saying that you didn't do the best you could, and it was certainly a fine approach, but I'm just concerned about that F spiking so much, but maybe I am missing the point, and Alexei is going to totally like clarify everything for me.

DR. BUCKEL: Go ahead, Alexei.

DR. SHAROV: All right. Here's the truth. It does seem unrealistic, and the only solution, or explanation, that I could come up with is, as I understand it, this is a full F, and so that was be for fully exploited age groups, and so for the older age groups, and I don't remember how the selectivity of age looks like, but it should be like rising up pretty steeply, and so, essentially, what it tells us, probably, is that there were no older fish in the recent years, and that's why you've got to come up with a really high F to create this.

DR. VINCENT: Thank you, Alexei. Yes, that is a much better explanation than I would have come up with, and that's also just partly because the biomass in the terminal year is the lowest that we've ever seen, and so, if we're able to catch -- It could also be due to some of the assumptions about recruitment, and so recruitment in the last two years we just fixed at the average of the recent -- The recent average from 2014 to 2019, and so, if those were possibly higher, by adding in this additional year of catch, it might have just increased the overall abundance a little bit, to allow for this catch, but, since this is projections, we didn't want to refit the entire assessment, especially just given that it's including just the catch in the terminal year.

DR. BUCKEL: Kai.

DR. LORENZEN: I don't have the truth. I do agree that, you know, it does look like something is a little off, and so it does seem that, you know, we should not have seen the catch levels in those years that we have seen, right, but, you know, what are you going to do? Maybe recruitment has picked up a little, and I don't know, and so I'm not sure that we can do much about it, but I also agree that it looks a little odd.

DR. BUCKEL: Genny.

DR. NESSLAGE: I am following Alexei's explanation, but I'm also looking back at the assessment, Figure 37, and the fully-selected fishing mortality rates are in the range of one to two, and so that's quite a jump, and so I don't know what the answer is, but I think that's something -- I will just point it out, and put a pin in it, and we can put it in our discussion. We can bring it up when we discuss how to deal with all of these uncertainties. Thanks.

DR. BUCKEL: Thanks, and, Matthew, if you -- I know this came up in April, because they were even higher, and is that correct, or am I remembering incorrectly? I was just trying to go back through our notes from April, and I know we came up with some ways to move forward, and didn't you have some Fs that were like ten?

DR. VINCENT: Yes, and so, from April, I was fitting into the -- Well, in April, we didn't have the estimates from 2022, and so we weren't fitting to that catch data, or the landings and discards data, and those Fs were very high, because I was fitting to the average catch over the entire time series, but we kind of -- We decided to change to using the interim F, or like the current average F, which is what is presented for 2023 and 2024, but then -- The high values in 2022 are based on trying to fit that recent catch average, which I think both the discards and the landings from the recreational fisheries are both higher than what we're estimating -- Or which were provided in 2021, but the abundance is already very low, and so I think that's partly what is causing it, but, yes, it is about three-times as high, three times higher than what it was in 2021, and so, yes, I --

DR. BUCKEL: Thanks, Matthew, for the reminder of what we saw in April versus now, and so other questions related to this? Just, you know, a reminder that one thing the workgroup discussed for that 2022 estimate is that the only -- Matthew, you can correct me if I'm wrong, but the catch data is going in, but we don't have the other information to go along with it, and so it's -- There is no index, no FI index data, and so there's other pieces that are missing, but so there's at least that -- Maybe, if all the data that are in the prior years, if they were there for 2022, maybe it wouldn't be as high of a spike, and there would be other information there, with age comps, et cetera.

DR. SHAROV: Matt, just to clarify that we understand it correct, it looks like, by fitting the model to the whole time series, we ended up with the population size so small at the terminal year, that, in order for us to get the level of catch that we estimate, that fishing mortality has to be as high as you report, and is that correct?

DR. VINCENT: Yes. Yes, that's correct.

DR. SHAROV: Okay. All right.

DR. VINCENT: I think, partly too, is that the recreational fishing -- The selectivity doesn't -- I will go back up to this, but it doesn't select fish until age -- Fully select fish until age-six or seven, and so that might be partly why -- If they are able to actually catch fish that are right at thirteen inches, and maybe they're only a year or two younger, then that's not shown in this selectivity function.

DR. BUCKEL: Other questions for Matthew on the presentation? Anyone online, Chip? All right, Matthew. It appears that you've done such a great job that no one has any questions for you, and so, Judd, we'll move to our public comment, and so, any members of the public that are online, or here, please raise your hand if you have comments on this agenda item. All right, and so no hands here or online, and so we'll move to 4.5, our action items. The first one is to review the workgroup recommendations and resulting base model and preliminary projections, determine if the P* should be 30 percent or 35 percent, and discuss high spikes in F for the interim years.

We just discussed the high spikes, and we can capture our language there, and the P* -- The reason that there are two is that the 35 percent comes from us working through our ABC Control Rule, but Mike Schmidtke was on the call, the workgroup call, and he did the calculation with the council's new ABC Control Rule, which is 30 percent, and so that's where the two numbers come from, if you haven't read the workgroup report.

The main difference between the SSC's ABC Control Rule and the council's is the council has the productivity and susceptibility risk change from a two, medium risk, to a three, high risk, and so that gets it to 30 percent, instead of 35 percent. Marcel.

DR. REICHERT: As a point of clarification, that's the new ABC Control Rule, correct?

DR. BUCKEL: It's the council's, and I guess we're in this time period where I'm not sure if we're required to use the council's -- Judd is going to make a comment on that.

DR. REICHERT: Well, that's exactly the question, of where we are with that.

DR. BUCKEL: Judd, did you want to comment on that?

DR. CURTIS: Yes, and Mike could probably give you better clarification, but so that change there came from just a reevaluation of the Tier 4, which is the productivity, susceptibility, and risk change, and so it went from a medium-risk stock to a high-risk stock, which changed a little bit of the P* value in that, and that's all part of the new ABC Control Rule. Now, as far as -- That should be active this fall, and it should be in force. Mike.

DR. SCHMIDTKE: We're in this weird final stage of getting that amendment in place. Right now, it is in its proposed rule comment period, and kind of the expectation is that, if it ultimately gets approved, then that would go into place sometime in January of 2024, and so it would be effective before any amendment that would implement catch levels here would go into place, but that's all contingent on an approval that has not happened yet, and so we would -- You know, that's kind of the weird place that we're in at this point.

I just want to caveat that the 30 -- The 30 percent P* that came out of the new rule -- The number that came out of the new rule, that's assuming that, I guess, the risk category that was kind of the preliminary value that you all had agreed on, way back when, when you evaluated that within the process, and, moving forward, kind of the plan set forward was that there would be an evaluation, input from the SSC and from the AP, and then, ultimately, the council would approve that risk rating, and so it hasn't gone through the entire process, as laid out in that amendment, but that's just kind of what we have here for comparison. If all the parties involved agreed to that number that was put in place, you know, that was recommended by you all back during the amendment development process, then that's what that number would be.

DR. BUCKEL: Marcel.

DR. REICHERT: To that point, I think it's very important for us, as an SSC, to document how we got to either the 30 or the 35 percent, in terms of, and this may be the wrong terminology, but what control rule are we following right now, because, you know -- Anyway, I think it's important for us to clarify that, because we have -- It seems like we have -- Unless I am completely misunderstanding, we have kind of two ABC Control Rules concurrently. Anyway, I'm just -- Maybe I'm wrong, and please let me know, but I think it's important for us to clarify that.

DR. BUCKEL: Alexei.

DR. SHAROV: Why would we confront ourselves? Right? Why would we go against ourselves? We have our control rule, and, unless we changed it, we stay with that. The council has the right to apply any additional risk-prone steps, and, I mean, they could go as far or as low as they please, and they have their own reasons for that, and so I think that's the way we should look at it.

DR. BUCKEL: Thanks, Alexei. Shep.

MR. GRIMES: Thank you, Mr. Chairman. I just wanted to advise that normally I would say, in this case, the ABC Control Rule hasn't been approved by the agency, and, until it's approved, you don't necessarily want to rely on it, but, in the case of the ABC Control Rule, both your current control rule, the guidelines, and the one that's been developed in the generic amendment, they all allow you to vary from the control rule, so long as you specify why you're doing that, and so I wouldn't worry so much about exactly which control rule you're following, but I agree entirely that your record should be crystal clear as to what you did and why you did it. Thank you.

DR. BUCKEL: Thank you, Shep. So there was some -- The 35 percent comes from our control rule, and there's some vote for that. Others? Genny.

DR. NESSLAGE: In anticipation that, if we went with our current ABC Control Rule, I could see the council coming back and saying, in a few months, but we now have a new control rule, and

what would you say now, and please review the scoring and risk assessment decisions, and the AP will look at them, and then we'll look at them, and then we'll have to rehash this, and so I'm wondering if we can frontload some of that and provide our feedback on the scoring.

Again, we haven't looked at it in some time, and it's been well over a year, I think, since we looked at the proposed initial scorings, and do we have time for that? Is staff ready for that? I mean, we can anticipate, and maybe cut out a whole meeting's worth of waiting, if we just kind of lay out -- Tell them what we think our answer would be with the new control rule, and kind of frontload it, but maybe I'm way off-base.

DR. BUCKEL: Marcel.

DR. REICHERT: I agree, and maybe it's helpful if someone can tell us, very, very briefly, what the council's conversation was, in terms of coming -- Because I looked at our report, and the medium risk was -- I made a note that that's different than the MRAG report, but it was the same as in the previous assessment, and then perhaps an explanation of the difference is not needed, but, you know, it may be helpful, briefly, and, again, in particular for record purposes. I am not sure who remembers that or what the -- Because it may be very -- We could very simply agree with the council, based on the changes in population size or current trends, and that would kind of shortcut this discussion.

DR. BUCKEL: That's what is in our April report, that, for Tier 4, we chose a medium risk, and you're right that we had the discussion about that, in some cases, it's considered a high-risk species, but we stayed with medium risk, because that was precedent, and that's what was used in the previous black sea bass assessment, that 5 percent.

DR. REICHERT: So, sorry, and remind me, and I didn't look that up, but MRAG gave it a high risk?

DR. BUCKEL: I don't -- Someone brought up that it was -- Someone said that I'm looking, and it says that black sea bass is high, and why do we have medium, and then it was discussed that that was because of the -- That's what we used in the previous P* for black sea bass, and so, Genny, you're asking about that, when we went through and looked at these different Tier 4, the productivity and susceptibility rankings, to go back and look at our discussion, for black sea bass in particular? Chip, do you -- Or Judd. When was that, and you said it was a year ago, Genny? Were you the chair? That's why you remember it.

DR. NESSLAGE: Yes, and I remember going through them, but there were so many species, and I don't remember exactly the justification, and so I don't know if it's worth tabling this and coming back with more information, so we can make a -- Unless people think that they just want to plow ahead with our usual current on-the-books, which is -- I don't mean to steer us in one direction or another, but it seems like we might get questioned and it get tossed back to us.

DR. BELCHER: I don't -- I think, in proceeding forward, I don't know that we would kick it back to you just because the ABC Control Rule is changing, and it's -- I think, in the lower tiers, I could see where maybe there would be a little bit more discussion, but, for the upper tiers -- I mean, we're talking about a weighting difference because of the PSE, right, but we don't know where we

are with ABC, and we were just talking about it for our activities at the council level, and the ABC for unassessed stocks to you guys, and it's much later in the year that we would even be discussing it, because we don't have a final approved rule yet, and so, I mean, there's still that thing that could happen, that maybe they punt it back, and it doesn't get accepted, and so I don't know that that would be something -- I don't see us holding, for this particular species, and, again, the data that we have for it and all of that, where this would be one of those ones where we would expect you to -- I am speaking for me, and I don't see that.

DR. BUCKEL: Thanks, Carolyn.

DR. REICHERT: Carolyn, real quick, do you remember the justification to change that to high risk within the council?

DR. BELCHER: I do not.

DR. REICHERT: Okay.

DR. BUCKEL: Mike Schmidtke.

DR. SCHMIDTKE: So, in your initial scoring, you actually had it as a medium risk. You had it as a medium risk, and so that number from the new control rule is having it categorized as a medium-risk stock, but it does have it categorized with its overfished status coming out of the stock assessment, because that -- The population size, relative to the status, that gets incorporated into the P*, the default P*, value there.

As far as availability of the evaluation criteria, this may be something that needs to get talked from an organizational standpoint, but, as I understand it, the expectation is not that you all would have a final ABC recommendation out of this meeting, and that you're going to be meeting to talk about black sea bass again in January, and so, if that's something that you all want, then let me know, and I can have that, and you can actually have some time ahead of the meeting to prepare for it, but I'm just throwing that out there.

DR. BUCKEL: Marcel.

DR. REICHERT: Now I'm even more confused, because I think, if I hear you correctly, the change in P* was a result of Tier 3, stock status, and not of a change in Tier 4, the productivity and susceptibility, which I -- Which, if I remember correctly, earlier, we said, well, there was a change from medium risk to high risk, and that changed the P*, but you just were telling me that it may be because of the Tier 3, the stock status, or am I now completely confused?

DR. BUCKEL: I had said Tier 4, because that's what is in the workgroup report.

DR. CURTIS: To help clarify that, Marcel, this was from the workgroup report, and so there was essentially two changes. The first was in that Tier 3, which changed the stock status from a four, which was both overfished and overfishing, to a three, which is either overfished or overfishing, because it was only one of them, based on the new projections in the base run, and so that changed the default P* from 32.5 percent, which was determined by going through the ABC Control Rule at the April SSC meeting, and an addition of 2.5 percent, to make it 35 percent.

Then, based on whether the application of the new ABC Control Rule is adopted, that productivity and susceptibility and risk change from two to three would incur that minus-5 percent change, which would bring it down to 30 percent, and so the old rule is 35 percent, and the new rule would be 30 percent.

DR. BUCKEL: Go ahead, Mike.

DR. SCHMIDTKE: Sorry, and I'm going to confuse you all even more, but, if you remember, what the council -- What you all recommended, and the council decided, was you guys got rid of the tier -- Like the tier language, and so it's not the same. It's not a one-to-one correlation of old method to new method and changing categories, or changing tiers, rather. You went to this category format of whether the stock was assessed, and to what level it was assessed, and then, in determining your P* -- That was where we had that table where, in the vertical, you had your stock risk rating of low, medium, or high, and, in the horizontal, you have your different relative biomass levels of high, moderate, or low biomass, and depending on where it falls within that table is what your default level is. If you have a low-risk stock that has a high biomass, then it has a high P*. If you have a high-risk stock with a low biomass, then it has a low P*, and all the places in between.

DR. REICHERT: So the Tier 4 here, on the second bullet point, is actually referring to the old -- To the equivalent in the old control rule, because there is no Tier 4 anymore in the new ABC Control Rule?

DR. SCHMIDTKE: Yes, kind of.

DR. REICHERT: As a clarification, I forgot that, and I was looking back, that our original P* was 32.5, which kind of confused me even more, but thanks for that clarification, Judd. That makes sense.

DR. BUCKEL: Fred Serchuk.

DR. SERCHUK: Thank you, Chair. I have a question, maybe out of ignorance. At the end of the black sea bass workgroup meeting, there is a section called prelim projections, and I'm just wondering whether these concerns, whether these statements here, are manifest in any of the simulations that have been done.

DR. BUCKEL: So Matthew provided projections for both P*s, and so I think -- Does that answer your question, Fred, or am I missing --

DR. SERCHUK: Are the statements true, based on a particular run, or do we now have to be concerned that, at recent average R, the stock doesn't recover? Is that a concern, with F equals zero?

DR. BUCKEL: Yes.

DR. SERCHUK: Okay. I mean, I think, if these have any validity to them -- I think, you know, we can discuss one scenario versus another, but, in any case, we don't know, do we, in many cases, and that's why we run a whole bunch of different scenarios, and so I'm thinking, if there are

scenarios that have been considered, and haven't been rejected for some other reasons, we ought to get back to responding to these questions, or to these observations, and that's all, Chair. Thank you.

DR. BUCKEL: Thank you, Fred. Okay. Back to agenda items, and so Mike is correct that we can ask for something more, if we want to see something more to help inform us for the P*, and save that for January, or, if folks are comfortable, we can move forward, and potentially set catch levels, based on the projections, at this meeting. Genny, can you explain that face?

DR. NESSLAGE: I didn't even raise my hand, but I just made a face. I don't see any point in revisiting -- Matt has gone and done all the hard work, and I think we should make a decision now, unless we're running short on time for other reasons, and I will just throw my proposal, is that we go with our new proposed ABC Control Rule, because we see this as -- We thought this was the direction we wanted to go in, and, if we have the latitude to do that now, I think we should, and so I would go with the 30 percent, based on the Comprehensive Control Rule Amendment, Table 2.1.1.3, on PDF page 32, if you need to refresh your memory.

DR. BUCKEL: Yes, and I think we -- We'll get that projected, because we want to get that -- As several here have mentioned, we want to make it crystal clear what has changed to go to the 30 percent. Carolyn.

DR. BELCHER: I would like to offer the suggestion of go ahead and present both of them, because we don't know, again, what's going to happen with the current version of the new ABC, if it passes or not, or what the timing is going to be of that, and so, at least if both numbers are there, we can work with -- If we're still operating under the old one, we can use that number, or, if the new one has come through as approved, we can use the new number as approved, and I don't know that we have to pick one over the other right now, if that helps you guys, if it would perhaps, you know, ease your discussion about it, because, I mean, really, it comes down to the procedural cut, which is what Genny's concern was, are you going to flip it on or flip it off, and are we going to have to revisit it, and I don't know that you have to revisit it, and I think you could offer both forward, with the predication of it's depending on when the new ABC Control Rule comes into play.

DR. BUCKEL: Or we could take Shep's advice, where we're just saying that, no matter what happens, yea or nay on the new ABC Control Rule, we're -- You know, this is our discussion, that we felt that the 30 percent -- We just document why, and then that's --

DR. BELCHER: Yes, and, I mean, that's an option, too. I'm just saying that I don't want anybody feeling like that's not something that we can't address as well, and, I mean, that's part of the record, and you're basically saying we're recognizing that we're on the precipice of two policies, and -- It's not saying we're picking one over the other, but it's just predicated on the timing of the release of the policy.

DR. BUCKEL: Thank you. Marcel.

DR. REICHERT: I agree, and I think, in that respect, I think it would be helpful for us to comment on the productivity and susceptibility risk, and, you know, given the current status of the stock, the low biomass, and we've talked about recruitment, low recruitment, I would be comfortable with assigning a high risk to this stock, and so I would agree, in this respect, with the council's updated

ABC Control Rule. I think that would -- In terms of justification and record. I would like to hear from the other members and what they think.

DR. BUCKEL: Genny.

DR. NESSLAGE: That would make it 20 percent then, with the new control rule. Look at Carolyn's face.

DR. BUCKEL: Mike, do you want to --

DR. CURTIS: Genny, you were reading that right, and I think what Marcel is -- I think what ended up getting confused here is that 30 percent P* aligns with what you all recommended as a medium risk and the current biomass for the new control rule. However, 30 percent also aligns with the old control rule, if you moved it in Tier 4, to a high risk, and so it's kind of the convergence of these two points, because one of the things to note is that, when you did your new control rule, risk was not tied to stock status.

The two come together in forming the P*, but risk is tied to the characteristics of the fishery, the characteristics of the stock, its biology, the market, the social concerns for that, and those are the things that go into is this -- Does this stock have a high susceptibility to experience overfishing, but then you combine that -- For the P*, you combine that with the actual biomass that has been observed in a stock assessment.

The old control rule kind of had those two things lined up right next to each other, which is one of the reasons why you all wanted to switch from the old to the new, so that they could be separated out, and you could see a clearer distinction between the two, and so I think that's what is getting confused here, and so the 30 percent is old control rule with high risk in Tier 4, and it also is new control rule with medium risk and the current stock status incorporated.

DR. REICHERT: Thank you for that clarification. I did not read that from the report, and so thanks for that. It doesn't necessarily completely help with my total confusion, but so then maybe I retract my recommendation, because I thought that that second bullet in the report, that you just pulled up, was completely based on the new control rule, and you just explained that that's not the case, and it was just equivalent to the old control rule.

DR. BUCKEL: So maybe make a note that the workgroup report was incomplete on the explanation of where that P* of 30 percent came from. Marcel.

DR. REICHERT: In that respect, I think it's important for us to clarify that, again, in terms of the record, what we are actually recommending, and I completely understand that we can provide the 30 and the 35 percent, or, well, I'm not sure if we can, but that means that the council can then decide, based on the current status of the new control rule, whether to go with the 30 or the 35 percent, and I'm a little -- I am not entirely sure, because that will result in two different ABC values, and I'm not sure if that's the way to go, but I think, if I remember, we have provided guidance to the council before where like two different ABC recommendations -- But I'm not entirely sure if that was the case. Anyway.

DR. BUCKEL: All right. Genny.

DR. NESSLAGE: I think, given the low biomass is already being taken into account, and the risk -- Well, depending on whether you're looking at the old or the new control rule, we're accounting for the stock status, and we're accounting for the productivity and susceptibility, in one way or another, as well as potentially all the fishery concerns, but we've also -- As Fred Serchuk mentioned, the issue with not being able to rebuild the stock at F equals zero under current recruitment, and the fact that we've got some serious uncertainty in the terminal years, both in catch and possibly in the assessment itself, and I think being more conservative is probably better, in this case. This is not a stock in good condition, under anyone's definition, and so I would -- Regardless of which control rule we justify it with, I would recommend the 30 percent.

DR. BUCKEL: Thanks, Genny. Others? Alexei.

DR. SHAROV: I have to admit that I don't remember all the elements of the existing -- I am confused, and what are we using? Are we still with the old control rule or not? There shouldn't be any ambiguity, and I don't care, and, you know, we could agree to 30, but there shouldn't be ambiguity. We stick to a particular set of rules that we agree to, and then we make a clear decision as to why, and that's the only thing that I wanted to hear, and so, right now, as I understand it, based on the proposal, applying current, on-the-books, old control rule, it suggests 35 percent, and is that correct? If we're revising the number, and that is we're moving it in one of the categories to a different one that results in 30 percent, that has to be clear, and I want to understand why we're doing this.

DR. BUCKEL: Go ahead, Chris.

DR. DUMAS: Can we determine P* under the old control rule, and then determine it under the new control rule, and present both, and then say we choose this one, and we select -- We present both, but then say we select this one, and the reasons why are, and then give our reasons. Does that help clarify it, or am I totally missing it?

DR. BUCKEL: I mean, I think that's what we came in with, that we had 30 percent from the new and 35 percent from the old, or we can say, hey, the old gave 35 percent, but, because of all the high risk, we're going to change Tier 4 to high risk, and it will go to 30, using our old control rule, and so I think we can build the case using either the old or the new approach.

DR. DUMAS: So, either way, we end up with 30?

DR. BUCKEL: A P* of 30, yes.

DR. DUMAS: Then that's what we need to do. Are we done?

DR. BUCKEL: Fred Scharf.

DR. SCHARF: I would just echo what Genny said, and I like what Alexei said, no ambiguity, and we apply our old ABC Control Rule, because that's the existing rule, but we can justify making changes based on the risk of the stock, and the susceptibility, et cetera, and so I think that's the route we should go.

DR. BUCKEL: Genny.

DR. NESSLAGE: If we need to add more justification to the list, I'm just going back to page 8, I believe, and Matt mentioned that the overfishing status -- It's not undergoing overfishing, but there's quite a -- It's right on the line, and so, if the uncertainty is as wide as it is, and it's potentially over the line, that would have, under current ABC Control Rule, would have pushed us into the Tier 4, for overfished and overfishing anyway, and so I think, given the uncertainty in F, relative to F 40 percent, that's another reason.

DR. BUCKEL: Great. Thank you. Judd, we can copy what we had in the April report here, that, for the tier different tiers -- Then we're going to be changing the Tier 3, and that's from the workgroup report, with comment that Genny just made that Tier 3 -- It's going from 32.5 to 35, but it's borderline, because of the -- It's not 100 percent of the runs didn't fall into not overfishing. Then the Tier 4 is moving from the medium to the high risk, and that gets us to a P* of 30. The ABC Control Rule tiers, the original SSC, was the April. Thanks. With the following changes to Tier 3 and Tier 4. Alexei, did you --

DR. SHAROV: No, and I just wanted to see this recorded, and so the primary reason is moving it to Tier 4, which results in 30 percent, and that is what we all agree to today, right, and we all had a good reason to do so.

DR. BUCKEL: Marcel.

DR. REICHERT: Then, Genny, if I understand you correctly, the updated -- What we heard today is that the stock status is different than what we discussed in April, but, as you said, the SSC decided not to change Tier 3, based on how close the overfishing status was and the uncertainty, and is that what you were just saying? Otherwise, if we're consistent, we need to change that too, but I thought you provided us with a justification for not changing Tier 3.

DR. BUCKEL: Marcel, we had a -- Coming out of the April 2023 meeting, the full SSC ran through it in April, and we came out with a P* of 32.5, and then the workgroup said, because it was both overfished and overfishing, but then, when the workgroup saw the F 40 percent, it was no longer overfishing, and so we changed from the 32.5 to a 35, and so Tier 3 changes, and then Tier 4 changed, but Genny made the point that another thing that we could add, that we're comfortable with this going to 30 percent, is that we changed Tier 3, but not 100 percent of the runs are showing -- Are not overfishing, and so --

DR. REICHERT: I forgot that that was already rolled into that -- Okay. Thanks.

DR. BUCKEL: Thank you. It's very confusing. Genny.

DR. NESSLAGE: Can we be specific, and, if I'm interpreting Slide 9 correctly, then 37 percent, as many as 37 percent, of the MCBE runs could indicate that we might be overfishing, and like, if we're going to justify it, like Shep said, let's justify it and be specific.

DR. BUCKEL: Okay. Is everybody happy with the P*, and we have it crystal clear? All right. Then the next bullet was discuss the high spikes in F for the interim years, and, Judd, this is

something we talked about when we had questions for Matthew, and so you can read Judd's response to that agenda item and do any wordsmithing. Fred Serchuk.

DR. SERCHUK: Thank you, Chair. I have a question. Will we be presenting all the projection scenarios that are provided in the document, or will we provide a few that we feel are appropriate for our recommendation?

DR. BUCKEL: My understanding is we're going to have to pick the one that we think is appropriate for the setting the ABC, and so we haven't gotten to that discussion yet.

DR. SERCHUK: Okay, and I just want to make sure that -- I mean, the complexity of these things, to a layman, is overwhelming, as it is now, and so I'm glad that we suggested that that's the way we go, and we'll choose one or two. Thank you.

DR. BUCKEL: Yes. Great point, Fred. Thank you. Alexei.

DR. SHAROV: Just for clarification, when we say "discuss high spikes in F in the interim years", there is one spike, for one year, if we're talking about the graph, right, the plots, or the projection plots, and is that what you're asking to explain, why, in the first year projected, there is a jump to a level of F of like three plus something? Is that the --

DR. BUCKEL: Yes, and I think it's just the 2022, and so, Judd, maybe you could --

DR. CURTIS: It's just that signal here, Alexei, and that's a typo there.

DR. SHAROV: All right.

DR. BUCKEL: So spike in F for --

DR. SHAROV: All right, and I think we've already discussed why that is, right? Okay. Genny wants to say --

DR. BUCKEL: Do we want to add any more language there in that discussion for the council? Genny.

DR. NESSLAGE: Yes, because I think it's going to come up. I think we should put down what Alexei and Matt explained, which is that there's several potential causes, including, or possibly in combination, low abundance of older age classes, with high recreational landings in 2022, leading to high -- And high selectivity for ages-six-plus. Is generating high Fs that needed to be bounded, basically.

I will just throw in, while Judd is -- Maybe we want to leave a note for ourselves, for the future, that, when this assessment is operationally, or somehow otherwise updated, that this gets closer scrutiny, this year of estimates, and maybe something will change between now and then, but, for now, it's BSIA.

DR. BUCKEL: Thank you, Genny, for the help with that item. Alexei.

DR. SHAROV: For the first bullet, I think we need to correct the statement of most F selectivity estimates are between one and two, and most F estimates, or most full F estimates, but not F selectivity estimates. That's in the first bullet, because that is confusing.

DR. BUCKEL: So, Judd, in the first bullet, after the semi-colon, "most estimates", and delete "selectivity".

DR. SHAROV: Most F estimates, right, and that's good enough, and I want to bring up the unpleasant point that like Genny and others pointed out, and there's something fishy that is going on here, where the model is not accounting for a process that is happening, and it's undetected, and I think Fred Serchuk is right again, that the black sea bass are possibly packing their bags and moving north, and it's either additional migration or additional mortality, and these are sort of the easiest explanations, but you can't -- You can't have the population as low, and then have the catch with F as high, and the full F of three, and it's like 90 percent, or 97, percent removal rate, and it's just not realistic, and so -- But we recognize that we cannot change anything, and this is the best assessment that we have at the moment, and so I am wondering if we want to say anything about it or just simply discuss that and say, well, we need to look at it, like Genny suggested, in maybe an update, where things will sort of, you know, get more normal looking.

DR. BUCKEL: I think, when we get to 2022, and the only data input is the catch, right, and so they're missing other information, and then you're also -- In those previous three years, you're assuming average recruitment, and so there's four years that we don't have any information on recruitment, and so there could have been a recruitment event, and it showed up in 2022, that we just don't know about, and we're still assuming, you know, this really low number, and so, as Genny mentioned, we mark this, and we come back to 2022 when there's more data, and we see if that spike is still there or if it's been smoothed out. Go ahead, Genny.

DR. NESSLAGE: I think we need to capture that, because that was really good, what Jeff just said, about it's not just blaming 2022 as a bad rec estimate, and this is more than -- There might be more going on, and there might be impacts of recruitment that weren't accounted for in these projections, as well as potential impacts of climate change, and just leave it at that, and all that needs to be examined at the next opportunity.

DR. BUCKEL: Thanks, Genny. Kai.

DR. LORENZEN: This is just a question of clarification, and the underabundance of older age classes, and is that a fact, or is it just something we are making up to explain -- I mean, is it -- Is that in that? I can't remember.

DR. BUCKEL: Go ahead, Genny.

DR. NESSLAGE: I'm just looking back, and I wasn't at the April meeting, and so I'm perusing the assessment, and the numbers-at-age, Figure 27, are mostly zeroes and ones, at the end of the last few years, and there's almost nothing above age-one, and so --

DR. LORENZEN: I am in full agreement with Genny.

DR. BUCKEL: Fred Serchuk.

DR. SERCHUK: I know this is slightly off the point, but it would be useful, and, again, I know this will require a lot of work, but both the New England Council and the Mid-Atlantic Council receive a status of the ecosystem report every year, in which information is given on trends in various environmental factors and trends in the protected species, and certain key species, which sort of ties in possible environmental conditions, and I think that's something to strive for here in the South Atlantic, because I think this area is going to be significantly affected.

In fact, I was at the New England SSC, a short time ago, and one of the reports that came in is that the mortality rate of sea scallops in the southern regions of the Mid-Atlantic are so high, because of natural mortality, and it has almost wiped out that fishery down there. Any information that can be put together that gives a better, a more comprehensive, understanding of environmental factors, whether it's currents, temperatures, so on and so forth, and the state of the resources, I think would be very useful, because I do think the climate is changing, and it will have an impact on resource management. Thank you.

DR. BUCKEL: Thank you, Fred. We could have a statement, after the climate change, that the SSC would like to -- Or recommends that the ecosystem status report be updated when possible, and we do have an ecosystem status report for this region, but I don't know if there are any plans for it to be updated any time soon, and, if folks know the answer to that, please chime-in. All right. I think we are going to -- We have an overdue break. We'll break for ten minutes, and then we'll come back and continue with black sea bass, and so 4:20. We'll start back at 4:20.

(Whereupon, a recess was taken.)

DR. BUCKEL: All right. If folks could get back to their chairs, and we could continue on, please. Okay. Judd, if you could put our agenda items back up. Our next item is to set catch levels, based on projections, if appropriate, and fill out Table 1, and so I think the "if appropriate" was if we could make some decisions on the items above, and then we could make decisions on the different projections that selecting from the list that Matthew provided us, and so those are for the ABC and the OFL, and I guess, for precedent, maybe type these out, and then folks can comment, and I think it would be the recent -- For ABC, it would be recent recruitment, and so that was the rec mu, and then, based on our previous discussions, the current discard, with the subscript "current", and then, based on our recent discussions, the F with the P* of 70 percent.

Then, Judd, another thing that Chip just reminded me is that what's on the books for the proxy for black sea bass is F 30 percent, and so we need to build the case for the F 40 percent, similar to what we've done -- To what we did for scamp, and I think it's the same justification, but others can comment there, and Matthew had a slide on that, that the literature supports the F 40 percent SPR over the F 30 percent SPR. In the first bullet, the discard current, and the OFL -- That would be the same, and so those are strawmen to be discussed, the ABC and the OFL. Alexei.

DR. SHAROV: Sorry, and I meant to ask this, and so I'm still not totally aware of how discards were calculated, and, in other words, I asked the clarification question earlier about how current discards are calculated, and so it's a fixed F level times whatever it was, but what about the foregone yield, and is this accounted for as well, because, you know, the projections are done that no catch, right, and the direct F is zero, but discards are modeled as a certain level of mortality, at certain instantaneous rates, but, if we stop catching, all those fish are survivors, and so they're in

the pool, and they are being caught and discarded as well, and, because of that, the rate of the -- The discard mortality rate might be different from, or should be different from, the discard mortality rate when the catch was taken as a direct F and the discards were an additional F, if I am making myself clear. I hope that was accounted for in the projections, but I wanted to make sure that that's the case, and sorry for, again, going back to the calculations. Is that clear, or did I confuse everybody?

DR. BUCKEL: It's clear, and I think that, if you look at the report, it says there was discussion, by the workgroup, of how to deal with that, and it says use first order approximation and keep discards at the current discard F and adjust landings F based on specified management scenarios, and so I think it was a difficulty, but Erik Williams is going to clear things up, and so go ahead, Erik.

DR. WILLIAMS: Thanks, Jeff. I don't know if I will clear things up, but Alexei is correct, and we are not -- We are not accounting for the potential for increased discards, when a reduction in catch is required by management, under these scenarios. Part of that is not knowing how management might plan to reduce that catch, and I would add that, in the commercial, reduce catch because it's a trap fishery, and reduced catch does not equate to increased discards, necessarily, but, in the recreational, it probably would, and so it gets complicated.

DR. BUCKEL: But it would be -- It wouldn't be dropping them in proportion to the landings, like it had been in the past, and so this is trying to improve on, you know, keeping the discards at least at that rate at the level that occurred at the end of the previous assessment.

DR. SHAROV: Okay, and so we'll just keep it within the uncertainty, and so that's part of the uncertainties that we essentially are doing. Okay.

DR. BUCKEL: So, Judd, if you could capture that, and I'm not sure where the best place would be, but maybe just at that -- That the discard F is -- There's uncertainty, because that discard F could go up. Alexei, you were saying with increases in the -- If the population size increases, then there's --

DR. SHAROV: It would be because the discard F is increasing, and so it's going to be the higher fraction of the fish will be taken, or dying, as discards.

DR. BUCKEL: Right, and the landings move to discards. Right. Got it. Judd, I think what Alexei was talking about is the change from being landed to discards, right? With the F of zero on the landings, then those landings would potentially be moved to discards and lead to a higher F discard. I don't even thing you have to add the "increasing biomass", and, even if it stayed level, but just that landings could move to discards, leading to a higher F discard. Okay, and so back to our ABC and OFL. Do folks have comments or -- Fred Serchuk and then Erik Williams.

DR. SERCHUK: It's just that I know that we're going to use a long-term R, and I know we haven't talked about whether there's been a phase shift in it, but, you know, we look at the recent recruitment, okay, and, I mean, it's been on a downhill spiral for it looks like at least ten years, and, with the most recent ones, at least the past five or six years, the lowest ever. If we have an OFL that says long-term R, are we suggesting that the stock can recover to that level?

DR. BUCKEL: Genny.

DR. NESSLAGE: So we've had this discussion many times, and I think it's in our projections working group report, that there's really no point in having a rebuilding plan if you don't think you can rebuild, and that's the whole point of the word "rebuild", and so we decided that --

DR. SERCHUK: Okay.

DR. NESSLAGE: But, for the ABC, we need to assume more current conditions, and so I think that's where that's all coming from, and does that make sense?

DR. SERCHUK: Yes, and it makes sense. If everything else remains constant, there are no environmental effects, and so on and so forth, but I certainly understand why you've done it that way, and it's just that it sets the bar pretty high. Thank you.

DR. BUCKEL: Go ahead, Erik.

DR. WILLIAMS: To your first bullet point, that ABC doesn't exist, and that's not the one that you want to look at, and I think what you mean is recent R with F equal to P* 30 percent and discard current, because it doesn't rebuild under recent recruitment. That doesn't read correct either, and sorry. That should be F equals P* 30 percent.

DR. BUCKEL: Amy.

DR. SCHUELLER: Should it be 40 percent, because we just said, in the third bullet, that the F 40 percent is recommended.

DR. BUCKEL: This is the P* and not the -- But that's a good point, and we need to have that the SPR -- This is a P* of 30 percent.

DR. WILLIAMS: Another point of clarification is that P rebuild in the OFL should be a P rebuild of 70 percent. I don't think we have any scenarios where we're just looking at a 50 percent recovery rate.

DR. BUCKEL: So, Erik, how do those look now?

DR. WILLIAMS: Very good. We have both of those scenarios computed.

DR. BUCKEL: Fred Scharf.

DR. SCHARF: So, Erik, in the projections summary, it says that the current discard level prevents rebuilding to 70 percent within ten years, assuming autocorrelated recruitment, and so the difference here is that you're using long-term recruitment, and so does it rebuild with long-term recruitment, as opposed to autocorrelated recruitment? I thought those were pretty similar. I thought the autocorrelated started with a random walk and eventually gets to long-term average.

DR. WILLIAMS: It does, but, because it's a slow progression, it doesn't quite get there all the way, whereas the long-term jumps up to that immediately, and so I think it just is a matter of taking

a lot longer to get to the same point exactly, and it's just, when you assume long-term recruitment, what you're assuming is it jumps up to that right out of the gate, as soon as we start our first projection year.

DR. SCHARF: Okay. Thank you.

DR. BUCKEL: Other comments on the ABC and the OFL? It's consistent with what we've done recently, and so that's good. Alexei.

DR. SHAROV: I just wanted to clarify and so ABC, recent R, F equals P* of 30 percent, and is it P* 30 percent times F 40 percent SPR?

DR. WILLIAMS: Yes. Technically, yes, that's correct.

DR. SHAROV: Okay.

DR. BUCKEL: Thanks, Alexei.

DR. WILLIAMS: Now, if we add a percent reduction to that, we can have three percentages in that, and that would really look good. Sorry.

DR. BUCKEL: Do we want to have the OFL similar, or is that -- Should that stay the same?

DR. WILLIAMS: Jeff, that stays the same, because that is -- That probability is 70 percent, and so we search across a range of F values that get us to a P rebuild of exactly 70 percent, or within the precision we set.

DR. BUCKEL: Thanks, Erik. Thanks for that clarification. Okay. I don't see any other hands, and so -- Erik, you mentioned that these are already -- These have been done?

DR. WILLIAMS: Yes, and Matt -- Matt is unable to raise his hand, but he can confirm, but I am pretty sure, and I was just looking through his document, and you have both of the ABC and OFL runs, with the tabled information there, and so I think you have what you need.

DR. BUCKEL: Okay, and, if Judd needs something, he knows where to find you, but we won't take the time to fill the table out now, and we can do that later. Judd is shaking his head that he's got what he needs, and so it is 4:40. Erik, you're up next, for the next agenda item, and how long is your presentation?

DR. WILLIAMS: I have twenty-two slides, and so twenty-five minutes, to maybe thirty.

DR. BUCKEL: If folks are okay, I would like to get that presentation, and then we can -- We may not get to the agenda items today, but we can get the presentation and ask any clarifying questions, or maybe begin to ask some questions, and are you available tomorrow to continue?

DR. WILLIAMS: Yes. Absolutely.

DR. BUCKEL: Great. All right. Thanks. Judd is going to give you control here, Erik, and we can move to Agenda Item Number 5, Modeling Discards and ABC Determinations.

MODELING DISCARDS AND ABC DETERMINATIONS

DR. WILLIAMS: Thanks, everybody, for bearing with me. I will try to run through this quickly and try not to keep us too much longer than we need to be, and I know it's the end of the day. Basically, my presentation is based on a request that we received from the council that basically asked us to look at applying sector allocations to develop ABCs and ACLs, you know, looking at landings-only versus discards, but, also, in looking at this, they wanted a review of a recent paper, which I will also do, and so the first part of my presentation is going to be sort of a review of ABCs and ACLs and how we compute things in our projections, and so some of this actually piggybacks nicely on what you just went through with black sea bass, and then I will go over the paper that we were asked to sort of review.

A quick refresher on OFL and ABC and ACL, and most of you are familiar with this, but, you know, the OFL pretty much comes from the stock assessment, and it's ultimately approved by the SSC, but then you guys are charged with developing the ABC, based on uncertainty, and then the council takes over and develops the ACL, and possibly ACTs, if they so desire.

The ideal path to sort of get to those ABCs is we do projections, as part of our stock assessment, that produces an OFL, based on a benchmark that is chosen, and the premier benchmark is FMSY, but often we end up with proxies, and then that -- I have OFL with a subscript of "T" because that's usually based on total removals, and then the SSC recommends an ABC that could be recommended based on total removals, and, if so -- But it certainly accounts for total removals, and that could be separated, based on a simple -- Well, it is separable by a given ratio of landings versus discards, sort of illustrated here.

Now, this is a very simplistic description of the system. The reality is that it gets way more complicated than that, and one of the first things we run into is removals are often measured in different ways, and we have to deal with numbers and weight. The fixing of FMSY, the selection of the benchmark FMSY, the selection of ABC, and even what ratio you're going to use among the fleets, are all conditional on selectivity and the ratio of the fleets, and not only the ratio of say commercial to recreational, but also the ratio of landings to discards. The management action itself can change this, and even natural variation in the system can change that, natural population dynamics or whatever is going on, and even a big recruitment class can cause a shift in our assumptions about what the selectivity is and what the ratios of the fleets are.

Reviewing how we compute the benchmarks, and what we do with projections, just quickly, you will recognize that we use the last three years in the stock assessment, usually, for our F calculations, and that's because F is variable from year to year, which circles back to that comment that I just made that the system is variable enough that that just naturally fluctuates.

We set the selectivity pattern, or sort of assume it, for each fleet, and that's what comes out of the stock assessment, and we combine those fleets in an F-weighted way to get a total selectivity that we then use for actually doing some calculations for the benchmark, and so the stock assessment sets that sort of weighting. It sets the ratio, and it sets the selectivity, and it sets the ratio of the

commercial to recreational, say, or even sets the ratio of the landings to discards, and so these things are assumed to be fixed in our projection -- Or they are fixed in our projection analysis, and we're assuming they're stable, in order for our projections to be sort of valid.

Sort of a basic fleet construct to consider would be where we have a commercial and a recreational, and, within the commercial and recreational, you have both a landings and a discard. The reality is it's even more complicated than that, and we often split the recreational even further, and we sometimes even split the commercial sector even further, and so we have many, many fleets, so to speak, that we have to think about, and they're all -- Our benchmark calculations are all conditional on the ratios that we chose for that whole fleet construct, and so the point here is we have to be mindful of that and how much that changes and when that changes.

Here is just a quick sort of graphic to illustrate, you know, how changing effort among fleets can -- With different selectivities can result in a pretty radically different selectivity that gets used in the benchmark calculation, and this is sort of an extreme example, but, you know, in this case, you have the same selectivity in Fleet 1 and the same selectivity in Fleet 2, in both allocation scenarios, or fleet allocation scenarios. It's just that, on the top, Fleet 1 is emphasized, and, on the bottom, Fleet 2 is emphasized, and you can see the resulting selectivity is quite different, and so you can imagine the benchmarks can be quite different in this scenario, and so this was just a caricature, a cartoon, to illustrate that point.

When we talk about managing landings and discards using ABCs and the benchmarks, we have to be mindful that, you know, you can either implicitly link discards and landings, or you could explicitly manage them, and so the point here is that you can set an ABC based on landings only, but the assumption is that that landings to discard ratio will remain unchanged, and so whatever you're doing to your landings presumably is going to happen to the discards at the same rate.

The same thing goes for if you just set a total ABC within that, and you're assuming that your landings and discard ratio remains unchanged, or the other alternative is to explicitly manage these separately and actually have an ABC for landings and an ABC for discards.

Right now, sort of the preferred method seems to be that we focus on the landings, and we assume that the discard ratio remains largely unchanged, or at least maybe significantly unchanged, but that has proven not to be the case for many stocks lately, and that's this next slide, and so, with our current practice of setting an ABC based on landings only, the problem is we have a disjoint then between our projection analyses and management effects. We end up with unaccounted and uncontrolled discards, unaccounted in the sense that we did not model them correctly in our projection analysis, and uncontrolled in the sense that there is no input controls for the open access recreational effort, is the one fleet that this is an example that we see this happening.

This is a result of our assessment projections being too simplistic, and we -- In the past, we have assumed total fishing mortality would be reduced equally across all fleets, including the discards, and the reason we did that was partly because we don't know what management is planning to do, because how things get reduced makes a difference, and management has, at their disposal, literally almost an infinite number of ways that they can reduce catch, and, without any back-and-forth with management before we do the assessment, or knowing what management is going to do, we're stuck in a conundrum of trying to figure out, well, what are they going to do, and what they do can make a difference on how we model our projections, but I'll talk about that a little bit more.

The other reason we've been simplistic is, frankly, our terms of reference for these assessments just call for very simplistic projections. For instance, they say, you know, project at 75 percent FMSY, but they don't specify how we're going to get to that 75 percent FMSY, and so the issue here is management actions have effects that can change the assumptions that are implied by the assessment projections and the benchmarks.

These are just a few examples of what can happen with various management actions and how it can affect our estimates. You know, I don't know if I need to read through all of these, for the sake of time, but these are obvious to a lot of folks, that, you know, implementing a new restrictive minimum size limit, or bag limit, will likely increase discards, and, I mean, that's sort of a no-brainer. You know, closing an area, or a season, to fishing will likely result in effort shifting, depending on the size and duration of the closure. Things like that.

I think the main mantra to be mindful of is, if we're learned anything over the years about fisheries, is fishing effort does not magically go away. It shifts, and it almost always does. Fishers have investments in their boat and equipment, and this induces pressure to catch fish. They will find a way, and it's basically a way of saying fishing effort shifts, and it will shift, and you just need to know where it's going to go, and so what does this mean for our population projections?

Well, what we need is better predictions of changes in fishing, and it's a difficult thing to get at, but hopefully we can get better at it than what we have been doing, and what it's going to require is better communication with management, to know what input controls they're considering. Are they looking at, you know, reduced seasons, reduced spatial areas, or, you know, reduced open access areas, and what is the tool that they're planning to use that can help us in guiding and making our predictions more realistic?

We want to try and predict the changes to targeting and discarding, and so can we predict what selectivity might do, and, for instance, the classic is you have no minimum size limit in place, and then you plan to implement one, and, well, we can probably predict, fairly well, what's going to happen, in that scenario, to selectivity, and then the big one is predicting shifts in effort.

Of course, this is -- It sounds simple enough, but things get very complicated very quickly, as you probably just learned with black sea bass, and so one of the questions that comes to mind is when do the benchmarks need to be recomputed, and this is kind of an area for further analysis, and I'm not -- I think it's going to be case-specific, but we probably should, as a standard analysis, start looking at changes in selectivity, and changes in fleet ratios, and how it affects the benchmark calculation, and then sort of come up with some rules-of-thumb of when these things change enough that you then actually need to go back and recompute the benchmark.

How can we make projections match management action? Again, this is where we need to better understand what management actions are being considered when we're setting up the projections, and we need to better understand and model fleet responses to various management actions, and this is where some research could help, you know, and looking at past actions and responses might help us guide predicting future responses.

That was sort of the gist of -- Sort of the background on why this is important to understand the relationship between landings, discards, ABC projection analysis, stock assessments, and how this

all interrelates, and the paper I'm going to go over next, quickly, is a paper that focused on Gulf of Mexico red snapper, and it was looking at tradeoffs associated with various management actions.

The paper examined management and population outcomes relative to various input controls, through sort of a simulation analysis, and what they were looking at is the effect of slot regulations, changes to discard mortality rates and total discards, changes to recreational limits and seasons, and, again, with a focus on red snapper in the Gulf of Mexico. What they found is that the -- It demonstrated the tradeoffs among competing management objectives, looking at -- It illustrated how reduced recreational discard mortality rates and allocation catch quotas between the recreational and commercial sectors, based on total dead biomass versus landed catch alone, can influence the efficacy of regulatory actions, and so, in other words, focusing on landed catch alone probably isn't necessarily a good idea, and you have to look at the whole picture.

Some more of the results, and they examined reductions in recreational discard mortality rate and determined that, alone or combined with harvest slot regulations, could result in longer recreational fishing seasons, increased recreational catch rates, a reduction of dead discarded biomass, and an increase in the population of reproductively-valuable older fish, and so the authors suggested that an increased use of this type of simulation analysis is warranted to aid fisheries management decision-making and spur development of performance measures that better communicate tradeoffs among the diverse objectives of the stakeholders in the multisector fisheries.

How can this apply to the South Atlantic? I think one of the big take-homes is this suggestion for increased use of simulation analysis is a good one, because it does help to understand what these tradeoffs are, and they probably can be very case-specific, very species-specific, and this is very similar to the analysis that was actually presented to you by Kyle Shertzer, and other authors, at your October 2022 meeting, and, in this case, it's a single-species example of a type of simulation analysis you could do using red snapper, and this is going to be published soon. The other thing that came out of the paper, the Bohaboy et al. 2022 paper, is that the authors did recommend managing both ABC for landings and ABC for discards explicitly, and so separately.

Let me try to summarize, really quickly, and so managing by landings ABC is sort of our current practice, and it is kind of recommended by the Southeast Science Center, and the reason for this is because the recreational discards, or actually all discards in general, are pretty poorly estimated, and so that's probably a practical reason why we're doing what we're doing now.

Although the Bohaboy paper recommends managing these explicitly, it's really not practical for our area, but, really, the effective difference between 1 and 2, either managing just by landings only or by landings and discards explicitly, really just depends on the degree to which discards are accounted for, both in the calculations and controlled in the management, so that deviations from the assumptions are minimized, and so, as long as we're able to accurately predict say those ratios between landings and discards, and use that in our projections, then it should, in theory, be all just fine, but that's where we've been sort of falling down lately, that our projections are not mimicking what's actually happing in the management world, or in the real world.

So, you know, what we need is better communication during the assessment and projection development stage on sort of the types of management actions that are being considered. We need better terms of reference for our assessment projections. In the end, this is all we need to do, and

we need to improve our assessment projection accuracy, and we need to better predict the management effects, and we need to also think about continuing significant time series in the trends, and that could be things that we're seeing, such as movement of the stock, if that's one of them, and trends in recruitment, and we're already sort of doing that, when we use near-term recruitment, but we should probably do this for other things as well, if we see significant time series trends.

If we could get this all working, ideally, and this is my sort of personal view of what it would look like if we could get this up and running the way I would like to see it go, and that is the projection analyses would include more accurate predictions of recruitment, management effects, and make use of those significant time series trends, and, ideally, it would also be a part of the pre-review SEDAR process, and ultimately included in the final report, and so one of the issues that complicates it is we finish a stock assessment, and then we often get into the nitty-gritty details of a projection analysis and fine-tuning it, and that just is going to protract the whole process, and it leads to a potential disjoint between the assessment and the projection analysis.

Ideally, we would like to have these projections set up within part of the SEDAR process and part of the final assessment report, such that, when we come to the SSC with our stock assessment, we also have a near-final set of ABC recommendations to be reviewed at the same time. It's a pie-in-the-sky idea, but that's -- Again, thinking ideally, that would be a goal for us to shoot for.

Of course, the other ideally is that management would establish effective input controls for landings and discards, and then, finally, you know, part of this whole process should probably involve a routine review of our projection analysis, and even a review of management performance over time, to see how we're doing. You know, one thing I've thought about, over the years, is, you know, what is the most important thing that we get from a stock assessment, and, really, when you get down to it, it is the projection part of it. That's where all the action happens, and, in many ways, our assessment models -- We focus so much on the fitting properties of those models, when actually we should be focusing on the predictive properties of those models, because that's where the rubber meets the road, and we should probably focus a lot more attention in improving those prediction capabilities.

Hopefully I didn't kill our whole evening, and hopefully I got through that quick enough, and so I will take any questions, or, if you want to just wait until tomorrow morning, and I will leave that up to you, Mr. Chair.

DR. BUCKEL: It looks like a lively bunch, Erik, and so I'm going to let them ask you questions now.

DR. WILLIAMS: Okay.

DR. REICHERT: Hi, Erik, and thanks for this overview. More often than not, management actions largely depend on the outcome of a stock assessment, and so can you comment? I understand that it would be good to look at some of the potential actions, and the consequences for projections, but could you comment on, you know, the link between the outcome of a stock assessment and then the management actions that come out of that?

DR. WILLIAMS: That is an excellent point, and it's something that I sort of glossed over here, because that is the stumbling block, so to speak, is because management doesn't -- It can't really predict exactly what they're going to do until they see the outcome of the assessment, but, at the same time, I think we've seen enough situations where we can generalize what their management approach is going to be.

For instance, look at the recreational fishery. The input controls that they're going to use for the recreational fishery are not going to involve seasonal closures, and they're not going to be -- They're not going to involve reducing the number of participants. Things like that helps us to understand what's going on, whereas the commercial sector, depending on the fishery, they might consider, you know, a seasonal limit, or even an area closure, possibly, for the commercial, but those seem to be out of the realm of possibility for the recreational, but just knowing that does give us that sort of first step at trying to approximate how we can best model our projections.

DR. BUCKEL: Fred Scharf.

DR. SCHARF: Erik, in the Bohaboy paper, I had a couple of questions about the predictions of fleet behavior and effort shifting, and so, in the simulations, I guess two questions. One, did they deal with any of that explicitly, as part of their simulations, to assess, you know, fleet response to regulatory changes and how that would impact their ability to separate landings from discards? If they don't, do they address it, you know, in their discussion, when they recommend splitting out the discards from the landed biomass?

DR. WILLIAMS: Yes, and that's a good question, Fred, and I will be honest, and it's been a while since I've looked at the details, and that's really into the details of that, and I can't recall, and so I'm not even going to try to answer, because I bet that I will answer it wrong.

DR. SCHARF: I will read it myself, too. I haven't read it myself, and so --

DR. BUCKEL: Genny.

DR. NESSLAGE: Are we doing questions, or can I comment on that point?

DR. BUCKEL: Please.

DR. NESSLAGE: I had highlighted page 11, where they -- In their discussion, where they say that fisheries scenarios presented in our simulation analyses assume that managers could take the steps necessary to achieve complete implementation of harvest slot regulations and discard mortality rate reduction measures, which may not be possible in a geographically-disperse fishery such as Gulf of Mexico red snapper, even with a great deal of public outreach and enforcement resources, and so I think the answer is no.

DR. BUCKEL: Thank you, Genny. Other questions for Erik? Anyone online, Chip? Fred Serchuk.

DR. SERCHUK: There are ways of trying to get better information on that, and that is through observer programs, or ways of monitoring the catch that's taken onboard, relative to where they're fishing and what is happening with retaining catch and discarding and so on and so forth. That

requires a completely different infrastructure, but it's been implemented in some areas, and so it's not completely out of the question.

DR. BUCKEL: Thank you, Fred. Other questions for Erik? All right. It's about ten after five. Kai or Alexei, did you have a question?

DR. LORENZEN: No, and I guess I have just a comment, and, I mean, I think, obviously, it makes sense to strive for separating the landings and discards in management, because that may help us, you know, manage for discards, but I think -- The only good example that actually I know where that was done is Pacific groundfish, where they actually did then develop currency, and you basically trade off increased use of fish descending devices for more landable catch, but, there, because you bring these fish up from very great depth, and, really, descending them made a big difference to survival, and I think, where we are, you know, the more use of fish descenders will only make a moderate difference to the discard survival rates, and so we would have to look at much more complicated ways of trying to effect a reduction in discard mortality, and, while we don't have, you know, basically the understanding, and the modeling, to do that, it's not going to make a big difference if we can, even in principle, manage them separately. What are we meant to do with this item, other than ask questions?

DR. BUCKEL: Well, we have several action items that we will table until tomorrow morning, and we'll pick up there, since it is ten after five, and we were scheduled to end at five, and so, if there are no further questions for Erik, we'll adjourn for the day and come back to action items for this tomorrow morning, and so please take a look at those, tonight or tomorrow morning, and the folks that are note takers for this are Addis, Dumas, Flowers, Scharf, Schueller, and Jennifer, and, Erik, will you be back in the morning, when we go over these action items, in case we have further questions for you?

DR. WILLIAMS: Yes. Absolutely.

DR. BUCKEL: All right. Thanks so much, Erik. Thanks for the great presentation, and that clears things up on this item for me, and that was very helpful, and so we'll adjourn for the day, and we'll see everyone at 8:30 a.m. tomorrow here. Thank you.

(Whereupon, the meeting recessed on October 24, 2023.)

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OCTOBER 25, 2023

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 in Charleston, South Carolina on October 25, 2023, and was called to order by Dr. Jeff Buckel.

DR. BUCKEL: Good morning, everyone. It's 8:30, and we'll continue with our October 2023 South Atlantic Fishery Management Council's Scientific and Statistical Committee meeting. We left off yesterday on Agenda Item Number 5, and we received a presentation from Erik Williams on the modeling and ABC determinations, having the sector-specific ABCs for landings and discards, and we're going to pick up with that today, and so, Erik, are you back on the line?

DR. WILLIAMS: Yes, I am, Jeff.

DR. BUCKEL: Thanks, Erik, and so, if folks have more questions for Erik, now that you've had a chance to sleep on this overnight, and you can ask him questions, and then Judd is going to pull up the agenda action items for us to address for this. Chris.

DR. DUMAS: Hi, folks. Hi, Erik. Thanks for the great presentation yesterday, and I've got a question, I guess sort of kick-off questions. Do we have a mic issue? I will try switching mics. Can you hear me now? Okay. Great. Erik, I just wanted to say thank you for the presentation yesterday. It was great, and you hit on a lot of great points.

First, I'm going to try to summarize what you said, and see if I understand correctly, and so my summary will be two points. One is management actions depend on the stock assessment, and the second point would be the stock assessment depends on the management actions, like how much effort and shifts across fleets and things like that, and so it would seem to be a chicken-and-the-egg type of problem, but, you know, in modeling, we call that a simultaneous equations kind of problem, and so that's what it seems to be to me, and so we could, you know, in theory, handle that issue, using sort of a simultaneous equations type of approach, but, furthermore, you said that we seem to need more research on the second part, how stock assessment depends on the management actions, how better estimates of how effort would change, and fleet shifts and those types of things would occur, and what the management actions would likely be, so that those estimates, or those assumptions, can then inform the stock assessment, and does that sort of summarize some of the main points that you were trying to make yesterday?

DR. WILLIAMS: Chris, that's great, and so it sounds like my presentation was successful, because you summed it up fairly well. The only clarification I would add is make a distinction, maybe a slight distinction, between the stock assessment itself and the projection analysis, and the projection analysis is mostly where that back-and-forth with management needs to occur. The assessment not so much, and maybe just the benchmark calculations that come out of the assessment are dependent on sort of the management structure, but it's mostly the projections that I was focusing on that is where we need that, as you said, sort of simultaneous solution space to occur, and so, yes, thanks, and that was a good summary.

DR. DUMAS: So the projection analysis part of the stock assessment.

DR. WILLIAMS: Yes, and that's correct.

DR. DUMAS: Great, and so, in that case, what -- I sort of was reminded, and so what types of information, in terms of effort estimates, fleet shifts or that type of thing, do you think are most important? Do you have some feeling, at this point, about which of those things would be most important for folks to try to do research on and further clarify, in order to have better information to better inform the projection analysis part of the stock assessment?

DR. WILLIAMS: Yes, and that's a good question, and so I've sort of thought of this in sort of an order of approximation sort of schema, and that would be, you know, first, just understanding what sort of controls the management is considering, you know, and vice versa, and what sort of controls are not being considered, and so, as I pointed out, and let's take the recreational fishery, for example.

You know, it seems clear that time and area closures are not really in the cards, and so that does limit us, limit the management, in terms of what they can do, and that will also help us in sort of predicting what kinds of shifts, in either selectivity or effort, might actually occur, or might not occur, in the case of the recreational fishery, and, you know, I don't think we're going to see major reductions in effort if you're not going to do anything with time and area closures, and so that's one -- I consider that like a first-order approximation.

Then sort of the second order is understanding some of these dynamics of, okay, what if we did put in an area closure, and what's going to happen to the effort that would have normally been in that area, and that's where we need some modeling, some research, to understand effort shifting, essentially, and that would be sort of what I would view as like second-order approximations, and then you can get into even further detail, in understanding exactly how selectivity might get affected, based on certain management actions and all of that, and so that's sort of my approach to how I'm thinking about this right now.

DR. DUMAS: Thanks, and that's very helpful, kind of understanding where we might need to move forward next to sort of have the largest impact on being able to improve that side of the analysis where the management actions affect the projection analysis part of the stock assessment. Thanks.

DR. BUCKEL: Other questions for Erik, or just to point you to the screens, and Judd has put the action items up, and we need to -- John Carmichael is coming to the table. Go ahead, John.

MR. CARMICHAEL: Thanks, and, Erik, I'm glad to see this, because, you know, I've had issues for a very long time about just assuming discard F and landings F were going to be proportional, because of the reasons that you state, that you try to lower harvest levels and things shift, and things move, and trying to deal with it is difficult. I think what the challenge is, in the system that we work with, is the council doesn't necessarily know what its management actions are going to be until it has an assessment that gives it a status that tells us what the nature of the problem is, and then we have a problem to solve.

Then, under Magnuson, we need to go out and scope that problem and get an idea of what we might want to do, and get feedback, and, you know, let the public know where things are headed, you know, as we start the amendment process. I think I agree with you that, you know, there needs to be a separation between what goes on with the assessment itself and then the projection process, which comes after, you know, and, within SEDAR, the goal has been, certainly for benchmarks and such, you know, research tracks, but soon to be again benchmarks, that the projections that were done were really just bracketing some of the possibilities, you know, doing F current, doing FMSY, that sort of stuff, with the total expectation that there was going to be this bit of iteration that would have to happen after the fact, with multiple requests for different projection scenarios once we had a status, once we had an assessment that's BSIA, and once the council knew, okay,

you know, how much of a change do I need to make in this fishery, and then they can start looking at different ways of going about it.

I think the challenge that always comes in is that this could potentially lead to a lot of work, and it's not unusual to have amendments that, if you start, you know, adding up your allocation changes and your ACL changes, and, you know, potential seasons or bag limits or whatever the council may be considering, you know, you can have fifteen or sixteen or twenty different permutations, with all having potentially some level of, you know, projection impact, and I think everyone would probably consider that's way too many projection analyses to do, and that's just with things standing alone.

The council picks, at the end, some, you know, alternatives across multiple actions that might hit, you know, five or six different areas, and so then you have this net result, which is the allocation decision, and the ABC and ACL decision, and a season decision, et cetera, et cetera, and so you have sort of that end outcome that, you know, ideally would be analyzed in this way, and I think, at that point, it becomes extremely complex, and I guess my concern is that we're often working under statutory deadlines, and all this back-and-forth can take a lot of time, particularly if we need to get SSC input on various ways, you know, and so I think that's going to be a challenge.

What I'm thinking about, of doing this, is, you know, a more practical way forward may be to just get fairly straightforward projections as the base in the assessment, to just project the stock yield, you know, much as we do now, and we usually show the projections, and the SSC gives the council overall stock yield, with, you know, here's what happens for discards, and here's what is available for landings, based on just kind of assuming that you don't change anything, and that's probably a good place for the stock assessment, but then knowing, as the IPT itself gets into evaluating all those alternatives, as you're saying, and there are consequences, I think most of that work is going to have to be done through the IPT, and some of it may require projections, but some of it may be, you know, addressed by just saying looking at how we think a particular action will impact the fate of the fish that are available.

You know, the assessment just focuses on what is the total fish that's available, and let the IPT and management plan process focus more on their fate, and that might be a way of getting over that, you know, impediment that was raised in Genny's questions at the end of the day yesterday about the fact that, you know, we don't know all the management when we're trying to make all these decisions about what we're going to do, but we need to incorporate that.

You know, I think just the way forward, to me, is really to expect that maybe the IPT is more involved in looking at different projection scenarios, and doing this where we can, and probably focusing on things that we really think will have an appreciable impact on the outcomes, because some things may make a minor tweak in say selectivity, but is that really important, given that the projection outcomes are probably 99 percent driven by recruitment, and the assessments are often driven by things like natural mortality, and do we have resolution, in our models, to really give the council any confidence in, you know, potential projection outcome differences for say a two-inch change in the size limit, and I kind of, personally, don't think that we do, and so we may have to just be practical in approaching that, and just let some of that stuff be worked out in saying we understand that it's not exact, but our data is not that great, and the resolution of our models are not that great, and I still don't know what recruitment is going to be, and so, you know, I appreciate

the efforts, and I'm glad to see that we are kind of moving this forward. I just want to make sure we do it in a way that is, you know, actually going to fit within this process that we work in.

DR. WILLIAMS: Jeff, can I follow-up on that?

DR. BUCKEL: Yes.

DR. WILLIAMS: John, you've hit on all the major points, as usual, and your insight is always good on this stuff, and so, yes, I think where we're headed with this -- If we want to have more accurate projections, is sort of our first premise, and I think we do, because our projections have largely failed us, I would say, it's going to require work, and that work is not only just sort of technical modeling aspects, but it is, as you said, a lot of back-and-forth, and there's no way to really avoid that.

What we can hopefully do is, as we work through some examples, we start to see some of those efficiencies of how we can maybe make the iterative process go quicker, or make it more efficient, and so, yes, you're right, and, I mean, I can't disagree with anything you said, and it's a lot of work, and that's -- You know, from my perspective, that's the one part that I'm concerned about, is we haven't really set aside, you know, time and workload expense for the after-the-assessment stuff, and I think we do need to purposefully make sure that we're allowing our assessment analysts the time and resources to follow-up and make these improvements to projections, because, like I said, I really think there's a lot to be gained here, and it's worth the effort, if we can put it into the system, and, like you said, we're still going to have to figure out sort of the nuts-and-bolts of how the back-and-forth might occur, but I think, in the long run, it will be worth it.

DR. BUCKEL: Genny.

DR. NESSLAGE: Hi, Erik. I'm just thinking about how this split of the ABC for landings versus discards might work, and I'm wondering, given the issues we've been having with high discards in the South Atlantic, if it would be worthwhile doing kind of a comprehensive analysis of the actual change in discards, in response to management actions for our key species, because the council has a -- It has a limited toolbox that they've been using, at the moment, in recent times, and one could go back and see what the impact of those are, whether it has increased discards by a certain percentage, or decreased it, based on whether it was -- You know, I could imagine a model of, you know, did they use bag limits, seasons, size, blah, blah, blah, and come up with some relationship, and I'm guessing -- Well, I'm not going to guess as to what that relationship would look like, and that might guide our projections in the future as to what range we could expect, or I guess what behavior we would expect, from the fishery in response to these management actions that have been used recently.

I guess would that be something -- I know there's other issues, regarding how that would feed in with changes in selectivity, et cetera, for the projections, but just to get a handle on what sort of magnitude of change we might expect and somehow incorporate that into our ABC advice, and do you have any thoughts on that, or is that a crazy idea?

DR. WILLIAMS: No, and it's an absolutely brilliant idea, frankly, and it is what is needed. You know, that's the type of research we're going to have to embark on, and that's kind of what has been holding us back also from improving our projections, is just not understanding some of those

basic things, like, as you just described, and, you know, if we do Management Action X, what is the likely outcome? What do we expect to happen in this fishery?

We can look back at past performance and probably get some clues as to what is likely to happen, and maybe even -- You know, my hopeful sense is that maybe we can even find some predictive measures, you know, looking at the -- You know, as bad as the MRIP data is sometimes, it's still -- There is some information there, and maybe there's some trends in the MRIP data that we could use to predict what's going to happen with recreational effort, and who knows, and so, yes, there's a whole bunch of research that could be done that I think would help our projections quite a bit.

DR. BUCKEL: Chris, did you have your hand up? Okay. John Carmichael.

MR. CARMICHAEL: That was brilliant, Genny, and I was thinking, while you were saying that, that, you know, we know that there's recoupment of whatever regulation you put in. If you put in a season, people still want to go fishing. You know, if you just close a month, well, it's pretty easy for people to just fish the same amount they did, but just over eleven months. You know, if you put in six months, then maybe that's harder, but then we know, as seasons get really short, we create what, you know, Brian used to call scarcity. We generate scarcity, because we say, oh, you can only fish for red snapper for two days, and so it becomes an extremely scarce resource, and everybody drops everything that they're doing, so that they can go fish for red snapper in those two days.

I've seen this in a lot of other fisheries. When I was in North Carolina, we saw that in the Roanoke River striped bass, and they used to open it and monitor it and close it when it got hit, and, well, the last year, before they went to just a set season, they had this just insane daily effort, because everyone was afraid it was going to close, because seasons were getting shorter and shorter, and so, the minute it opened, everybody is, you know, taking time off, and they're taking time off work, and they're not getting their hair cut and their oil changed and all that stuff, and they were going fishing, you know, but then, once you went to like a longer season, well then, suddenly, life comes back to normal, and people actually, quite often, it would seem to me, maybe fish less than they did when say a season is two weeks, or the season is two months, because, you know, they don't feel like it's lost, and, well, I can go next year, when the season closes.

I think that's -- You know, there's probably more known about that in game management, in duck management and things like that, but I do feel like, for us to really get somewhere on seasons, and change behavior like we need to, and get any sort of effective management of the overall effort, without just stopping all opportunity, we've really got to have a better way of understanding, you know, where are those bounds. When is a season so short that it doesn't have any impact, versus when does it become too short, that suddenly now you've created scarcity, and you're shooting yourself in the foot as a result?

I expect the same could apply for area too, because I know that Erik has done some work in looking at, you know, effort within distances of port, and so there's probably some way you could apply the same concept, to see like, you know, how big of an area closure actually impacts effort, without necessarily maybe closing off an area entirely off of a single port, if you closed off ports or something, and I don't know, but, you know, it just seems like, in marine fisheries, we have a total lack of understanding of how these regulations are actually going to play out, but then we're forced, by the management program we have, and the evaluation program, that we're supposed to know

all of this, and predict it, when we go put a regulation in place, and we're sitting here trying to change human behavior with no idea how it's going to change, and I think that's part of our current problem in snapper grouper.

We have a multispecies fishery, and we have no idea how behavior really changes. Innovative ideas tend to not get off the ground, because we can't predict, a priori, what they're going to do. You know, no one can really well predict say what a ten or fifteen-snapper-grouper aggregate limit would do across-the-board, and, you know, it's really hard to get behind that, when we kind of have to go out on faith and assume it will do something, because I've got to have a record that proves that whatever action I put in ends overfishing, or else the agency may not approve it, and so we're not in a system that allows us to really innovate, and so we maybe need research and simulations along these lines.

I think, you know, a good place, Erik, for like you and the social and economic group is to maybe work together and make this a focus, and can you put some bounds on some of these regulations, with the idea of, you know, our ultimate goal is changing human behavior and getting some effective controls in the fishery.

DR. BUCKEL: Chris.

DR. DUMAS: I think those are great comments, from Erik, John, and Genny, and I think the value of Erik's comments is sort of giving sort of a list of things, and the relative sort of order of magnitude and priority, and how they might affect the projections within the stock assessment, and I think that's very useful, in sort of giving a list of things to look into for researchers, and for grad students looking for projects, and things like that, and so that really helps.

If you look at all the different aspects of a stock assessment, you know, there are a large number of variables in there, and there's a large number of potential relationships you could look at, and so hearing from someone like Erik, with the experience, and other folks who have hands-on experience with the stock assessment models and running them in our region, and their, you know, feeling for which factors are more important, which relationships might be more important to get a better understanding of, and I think that's very useful, and so feedback like this, that Erik gave, I think is extremely useful to us, and the research community, when we're trying to decide, you know, what should we prioritize, in terms of our projects, and our students projects, and so thanks.

DR. BUCKEL: Thank you, Chris. Fred and then Kai.

DR. SCHARF: I was thinking about the same thoughts that Genny had, about, you know, how we could learn from taking a retrospective look at, you know, how the fleet behavior has responded to different regulations over time, but it occurs me that, you know, that the usefulness of that is going to depend on our ability to measure accurately the two things that have been probably been challenging to us the most, right, which is discards, right, and then the other is effort, right, and so we just spent a bunch of time, yesterday, talking about fishing effort, and trying to understand the biases of the surveys, and the hope is that, yes, maybe those surveys are biased high or low, but at least the metric is a good index of what's happening with effort, but I think any ability to predict fleet behavior depends on our ability to sort of accurately understand what has happened in the past, which depends on our ability to measure those two things.

DR. BUCKEL: Kai.

DR. LORENZEN: It's actually in the same vein, and I think, you know, recreational fishing behavior and discarding are amongst our worst-monitored pieces of information, or discarding in particular, and we really do not have direct observations, right, but I was excited to see that sort of electronic monitoring systems are becoming available, and they're sort of small and portable enough that you can put them on some private recreational boats, and so I think that will be a very interesting line of work, to actually get observations on fishing and discarding behavior under different regulations. Thanks.

DR. BUCKEL: Others? John Carmichael.

MR. CARMICHAEL: I would love to see Fred's comments get highlighted in the report, that, you know, the two most difficult things are effort and discards, and they are at the core of the problems that we're facing, and I think that would -- You know, coming from this group, I think that would really be helpful, to put it into perspective as to why this is such a challenging problem, and, you know, we have a lot of different management actions out there in place now that could be looked at.

You know, we have species with seasons, and we have some various closed areas, of various sizes, and that provides perhaps a starting point, but I don't know if you guys are aware, or you've heard, and, you know, the researchers amongst you might find this interesting, about the IRA funding opportunity, Inflation Reduction Act, and there's a lot of money that has gone to NMFS, and most of it is tied back to resiliency, climate resiliency, you know, dealing with communities and preparing for climate change.

There's $20 million that's going to the eight councils, and it's going to be awarded on a competitive basis, and the councils can develop various projects and compete for the funding, and it's, you know, really doing anything that's related to being more climate resilient, and so different regions are in different states of preparedness, particularly in information, in terms of ecosystem status reports, climate vulnerability analyses, those types of things, and so we're still in the very early stages of just getting that information, but there is also support for like the -- For like making progress on the scenario planning process that we worked on over the last year with our two councils to the north, but also just any projects that help us be more nimble and resilient and prepared for climate change, and I think, you know, work of this type, for you researcher types, could really fit into that, because, you know, climate change is likely to affect fish availability and the species compositions and, you know, how anglers interact with the resource, and so that could be a really good tie-in for some projects.

You know, if we better understand how anglers are interacting with the resource, and what's out there, we might better be able to know how to respond management-wise as that changes, and as species shift into other areas, and they start encountering new things, you know, and maybe they can learn from lessons that we've learned and not repeat some of the same problems, you know, things like that we're seeing with triggerfish more predominant to our north, and we're certainly seeing our pelagics more prominent to our north, and so we'll keep you guys posted on this funding, and it's still much a work in progress, and getting the details, but there is an opportunity for some pretty significant projects, and this may fit in our region, with, you know, us, as a council,

being more climate resilient, which we're certainly committed to, but it's just trying to understand what the heck it means.

DR. BUCKEL: Thanks, John. That's good to know. Others? This has been a very good discussion this morning, and I think we've got some good fodder to fill out our action items, and so we can get started on that, unless folks have something else they wanted to ask Erik about, while he's here, and Chip is coming to the table. Go ahead, Chip.

DR. COLLIER: One of the main points for having this item brought forward to the SSC was concerns about changing from separating the landings and discards at the ABC level first and then going to the sector. What the council is considering doing is going to the sector first, and then separating out landings and discards from there, and so that's what they wanted to have the SSC really focus in on. Are there any concerns with developing management actions using that type of approach, because they want to -- The discussion, at the council table, is they wanted to hold the different sectors accountable for their discards, and, by applying a catch level for a sector, and then having them responsible for their discards, it will make them a little bit more careful about how they're dealing with the different, or potential, management actions, because, in the discussion, the commercial sector was a little bit more concerned with how many discards were going on in the recreational sector, and, as you know, it comes back to red snapper, and so that's where a lot of the discussion focused in on. Is the SSC really seeing any -- Do they see any issues with changing the order of operations, going to sector allocation first, prior to divvying out the landings and discards?

DR. BUCKEL: I will take a stab, and I think what we heard is that, at this point, that would require that the projections break things out, right, and it sounded like the information wasn't there, and folks can -- That there were these research things that needed to be done, because, to do it correctly, we don't have the information to do this projections, and we could do it, and we just did black sea bass, and had a constant rate of discards, and that was a first approximation, and we know it's not the best, but, if that -- Those projections could be used to get these ABC landings, ABC discards, by sector, using the fleet from the stock assessment, correct? All right. Genny has got a quizzical look.

DR. NESSLAGE: Maybe I'm not understanding the issue, but I think, on Erik's slide 8, I think we're still stuck with we would need to deal with the projections differently, in particular the selectivity of the different sectors, if I understand correctly, and we're using a kind of combined selectivity of the different fleets, and so, if you're going to -- I guess, if you're going to be that specific in your ABCs by sector, wouldn't you need to keep them separate, or am I missing what the suggestion is? Probably.

DR. BUCKEL: Marcel.

DR. REICHERT: So the -- This is all about projections, and so it still means that we set one ABC, and then, in the projections, fleets are separated first, and then discards are separated, if I'm understanding correctly. That's what Chip just proposed, in terms of the preference of the council.

DR. BUCKEL: Yes, and that's what the council would like to have, and, Chip, correct me if I'm wrong, but they would like to have sector-specific ABCs that are not just total, and it's the ABC

landings and ABC discards, and so ABC landings and ABC discards for rec, ABC landings and ABC discards for commercial.

DR. REICHERT: Exactly, but that still would come back to what we discussed earlier, that, in terms of the projections, what are you going to use, and that comes back to Erik's point that you can use current conditions, but that ultimately depends on what management comes down the pipe, because that may change everything, and so that's where I have difficulty seeing how that is going to work, because I think a decision will need to be made of how this is going to be approached, unless you get this back-and-forth after the fact that we discussed, and probably should happen, and so I'm not entirely sure how to envision how that would work currently, and, again, going back to, okay, we use the status quo in terms of our projections, and you know what I'm trying to say here?

DR. BUCKEL: Go ahead, Kai.

DR. LORENZEN: I mean, obviously, there are implicit assumptions about how these things work that are in the projections, and those could be explicitly pulled out, but I feel sort of where we -- The presentation we heard, and the discussion we had, wasn't set up to answer the question that we were just asked, because I think we need a better -- So, for me, it's interesting, because, obviously, having come from the Gulf, and the projections we do there, and this is, you know, using SS and different projections from what we're doing here, and so now I'm not really sure even exactly how our projections work, and so I feel a little at-sea, but I think one would have to -- We should look at how exactly this is handled in our assessments, and this is more of a -- To me, this is more an outline of the principle of what we looked at than a review of how specifically we deal with these things in our current assessments and projections, and maybe other people, who have been here longer, know that by heart, but I don't, and I sort of feel not quite ready to answer this question.

DR. BUCKEL: Thanks, Kai. Genny.

DR. NESSLAGE: Actually, if you could go one more slide back, I think Erik hit the nail on the head here in that green text. Typically, our fleet structure is more complicated than just commercial landings and commercial discards and rec landings and rec discards, and so, if you're going to start going to fleet, or, sorry, sector-specific -- I don't know exactly what you're implying by "sector", and it's going to differ, I assume, by fishery and FMP, and so like, if we don't have that structure in the model currently, I don't see how we would be able to generate that kind of specific advice, but maybe I'm missing something.

DR. BUCKEL: Thanks, Genny. Chip.

DR. COLLIER: So, for FMPs, sectors are clearly defined, either recreational or commercial, and so it's cut-and-dried. If we get down to when we're using language like "component", that is a subgroup of a sector, and so we have a recreational -- We have, within the recreational fleet, we have components for the private recreational, the for-hire, which can include, sometimes, the headboat and sometimes is just the charter boat, and so "component" deals with subsections of a sector.

DR. BUCKEL: Marcel.

DR. REICHERT: Well, so, in terms of here, typically our fleet structure is more complicated than that, and so the fleet structure is equivalent to the sector, is what you're saying, or is that entirely different, and so I'm not sure how this applies.

DR. COLLIER: So what he's identifying here is commercial landings and discards, and that is a sector. Within there, there can be separate fleets, and so it could be -- Let's say, for the commercial sector, it's -- If there is usually a different one, there can be a hook-and-line component of the commercial sector, and also a longline component, and so, at least in council staff's minds, those two would be combined for the commercial sector, and then, for the recreational sector, it would include all private rec and for-hire fleets.

DR. REICHERT: But we're just talking about sectors and components, and so the fleet is then equivalent to a component?

DR. COLLIER: So this is where all the language is getting mixed up. We have a commercial sector, and we have a recreational sector, and fleets aren't used in management. They can have -- The management can have different components that go into divvying up those ACLs that are provided, and they will have some allocation that are provided to different groups, and there is really only -- I'm thinking of I think only one part of the commercial component that has a sub-ACL that's applied to it, and it's the golden tilefish longline fishery that has 75 percent of the commercial ACL that's attributed to it, but I believe that's the only one that we have in the South Atlantic that is split up like that, and everything else is managed separately.

DR. REICHERT: But where I think this may be relevant is, if you're talking about stock assessments, you're talking about fleets, and that's where that language -- That's why I think that language may be so confusing, because then, if you go from your stock assessment to your projections, and I understand the council is interested in sectors and components, and so is there -- Maybe it's very simple, but does that mean there is a translation step necessary somewhere? Do you know what I'm trying to say here, because that's relevant for how you structure your projections and how we provide the council with management recommendations. If we're getting fleets, in the stock assessment, that is different than what you guys want, in terms of sectors and components -- Anyway, maybe this is simpler than I am thinking about here, but --

DR. BUCKEL: Go ahead, Chip, and then Kai.

DR. COLLIER: I mean, I'm not aware of us ever getting an ABC for a fleet, or a -- So it just comes as one big group, right, and so, at some point, they're divvied up into a recreational and commercial sector, and that comes at the allocation stage, and so what we're talking about is can we do this allocation stage before it is divvied up between landings and discards, and so, at this point, we would need to have really good information on discards, which is unfortunate that we don't have great information on that, but we are still -- At some point, we're dividing what I'm seeing as -- We're taking two divisions in the process.

One is for landings and discards, and the other is for a commercial sector and a recreational sector. Is it okay to take those divisions in different -- Can you move those interchangeably? Obviously, it's going to lead to some differences in it, and the council is interested in can we build management based off of that, and what are the risks associated with that, and I don't know if they necessarily

want to go there, and they want the SSC's comments whether or not it is a good approach to do. I feel like, in the Mid-Atlantic, they're using this type of approach, where it is divvied up prior to -- It's divvied up to the different sectors prior to the discards being removed.

DR. BUCKEL: Fred, to that point, and then Kai.

DR. SCHARF: Chip, just a clarifying question, and so, in the -- This body provides you with an ABC, and the council sets an ACL and decides on allocation and tracks landings throughout the year and decides when to close the fishery, when the quota has been met, and how are the discards accounted for in that process now? In other words, are they -- Are the landings -- The ACL is landings only?

DR. COLLIER: Yes, and so the landings -- Typically, how we monitor the fishery is based on landings only, and, when you guys actually get the output of a stock assessment, it's already divided up between landings and discards. You provide a catch stream in that, and so the question is can we get a catch stream that is commercial and recreational? From there, you guys would also provide an ABC that would have recreational and commercial, maybe, ABC landings and discards.

DR. BUCKEL: Kai.

DR. LORENZEN: So, I mean, the stock assessment structure, it says here, is separated into commercial landings, commercial discards, recreational landings, recreational discards, and then, you know, when you do the projections, you can either, I guess, keep those separate or you can -- What I understood, from the presentation here, is that then you create a combined selectivity, and is that correct, and so you're not -- I mean, basically, I mean, yes, you can combine them at that stage, or you can keep them separate, in principle, I guess, and I don't see, you know, why you couldn't carry that forward, because you're starting with this structure, but I still feel it's sort of a question that I think is interesting, and important, but we didn't quite set this up to answer this question.

DR. BUCKEL: So, Kai, to that point, what would you -- We could provide that, and what would you like to see, where you could better address the council's question, so that we can have that for a future meeting?

DR. LORENZEN: Let me think about that, but I think there were other comments.

DR. BUCKEL: Okay. I've got Fred Serchuk, and then Erik Williams, and then -- Is it to that point, Chris? Go ahead, to that point, and then we'll go to online.

DR. DUMAS: I was just going to say, with respect to the question of, you know, should we, I guess, set the ratio of landings to discards, sort of use that first, and then the ratio between commercial and recreational second, or should we do the reverse, and do the ratio of commercial to recreational first, and then the ratio of landings to discards second, and, if both ratios are 50-50 -- So, if the ratio of discards to landings is 50-50, and the ratio of commercial to recreational is 50-50, then it doesn't matter which order you go, and it doesn't matter which comes first, but, the more that either one of those ratios departs from 50-50, then the more of a difference it makes which goes first.

Different fisheries will have, you know, different ratios of landings and discards and different ratios of commercial to recreational, and, the more either one of those ratios differs from 50-50, the more of a difference it will make, in terms of switching which comes first, the discards to landings kind of calculations or the commercial to recreational calculations, which one of those comes first and which comes second.

DR. BUCKEL: Thanks, Chris. Amy, was it to that point? All right. Then we're going to go to -- Jie, to that point?

DR. CAO: To Kai's point, I think my understanding of how the stock assessment model works is you need a combined fishing mortality, for completing the benchmark, and so, in essence, you need to have a source of selectivity that was combined from all the fleets, and that combined selectivity depends on the assumption of ratio between different sectors, and that selectivity gets carried onto the projection, and so if, in a projection, your ratio between different sectors change, depending on what management actions are, and if that deviates from the ratio you estimate from the assessment model, that's going to be a problem, and that's my understanding.

DR. BUCKEL: Genny, to that point?

DR. NESSLAGE: Yes, but I think -- Hadn't Kyle done something like this to adjust for that -- Was it red snapper, where he did it iteratively every year in the projection, where he recalculated the benchmark, and haven't we seen that?

DR. BUCKEL: Okay. We're going to go to Fred Serchuk and then Erik Williams. Go ahead, Fred. Fred, it shows that you're unmuted, but we're not hearing you.

DR. CURTIS: We're still not hearing you, Fred, and you should be unmuted on our end. He's having some audio troubles, and so let's go on to Erik.

DR. BUCKEL: All right, Fred. We're going to go to Erik, and then just chime-in when -- You know, keep trying to contact us. Go ahead, Erik.

DR. SERCHUK: Can you hear me now, Chair?

DR. BUCKEL: Yes, Fred. We can hear you now.

DR. SERCHUK: Okay. Sorry. I think this has been a really thorough and illuminating discussion. I also think that all the issues that have been brought up are not unique to the South Atlantic Council. All the councils, and all the SSCs, have to deal with similar issues, and I'm suggesting, as a possibility, that these issues probably could benefit from being presented, or discussed, at the National SSC.

We're not the only councils that have to deal with discards and allocations and fleets and sectors and so on and so forth, and I'm just wondering whether we might all benefit from having the collective experiences of other scientists providing advice to the other councils, to see how these issues have been addressed there and whether, collectively, we might have an approach that we can learn from one another, and so I would suggest that this would make a good item to be discussed at the National SSC. Thank you.

DR. BUCKEL: I think that's a great idea, Fred, and we have that agenda item coming up later, and so we'll add that agenda item for the next national meeting. Erik Williams.

DR. WILLIAMS: Okay. Thank you, folks, and so Kai and Jie had it right, and the answer to Chip's question is it doesn't matter, because, in a sense, we are computing an ABC for all sectors, whatever you want to call it, both fleets that we set up in the model, and, more often than not, our fleet structure in our models is more complicated than what management actually deals with, and so we don't have a problem there, in terms of how management goes about making their decisions.

If they want to start with a discussion about rec versus commercial, and then move to landings versus discards, or vice versa, it does not matter. What matters is what their final decision is and how much that then changes our original assumptions in the assessment, in terms of the ratios among those fleets, and how much those ratios might change, based on the management that they decide.

Now, I will add the caveat that those ratios could change a little or a lot, but really what matters is how different those fleets are operating, and so, for instance, if we have a commercial and recreational fleet that have very similar selectivities, then changing the ratio among those isn't going to have much impact, but it might have a lot of impact on the discards, and so, really, what we're trying to do here with these projections is get to a point where we can better structure the projections to match what the management outcome decisions are and how that would affect then these ratios and the sort of get to a precise benchmark calculation.

What is not known, and I hinted to that in my presentation, is how far can we deviate from the assumptions of those ratios in the original assessment, and how far can we deviate from that and still not break the system, so to speak, or break the projections, and, as I indicated in my presentation, that's probably very fleet -- Very stock-assessment-specific, but it's something we should be looking at so that we know that, okay, management went too far, say, in reallocating commercial versus recreational, and, therefore, we have to circle back and recompute our benchmarks.

To answer that question, we kind of have to do an analysis, and there's no rule-of-thumb that is going to answer that question for us, but I think, to answer Chip's question, our projections are structured along the same fleet structure that we set up in the original assessment, which is almost always sufficiently broken down enough that it's set up for management to go ahead and tweak as many sectors as they want.

Like I said, the big question is we need -- This is the iterative process, that Marcel was hinting at, where we're going to run into issues, and we want to make sure we match our projection assumptions with what the actual management decisions are, and that's that iterative process, and how do we engage in that process? How do we start out with that process, because we can't give accurate advice to the managers without having at least a good idea of what they're considering, and vice versa, and so that's the tricky part, and so, you know, let's take a look at black sea bass, just to sort of illustrate this point.

What we have been doing, up until black sea bass, is assuming, in our projections, that, when you reduce F, you're going to reduce F across all the fleets in the same proportion that they're set up

in the assessment. That's not true if what management ends up doing is restricting landings, but ignoring discards, and so that's what we attempted to do with black sea bass, is say, okay, it looks like management is not going to address discards for black sea bass, but they may address the catch, and so that's why we left discards the same and then allowed for changes in the catch, and we can -- That is what I would call sort of a first-order approximation.

We could get more detailed than that, once -- You know, if we really need to, if management gets to where they make more final decisions about black sea bass, and they've tweaked those ratios a little bit more, and we can circle back and recalculate the benchmark and projections with those more precise ratios that management decided, but I think the question -- To answer Chip's question, it doesn't matter. As long as -- What really matters is that we're trying to match our projections to what the management outcome is actually going to -- How the execution of that management is going to affect the fisheries and that we're modeling that in a way that is as accurate as we could make it.

DR. BUCKEL: So, Erik, the projections of black sea bass is new ground, and the discards are -- The rate of discards, fishing mortality on the discards, is going to remain the same, and is that, in your opinion, useful to do this first attempt at an ABC breakout, or is there concern -- I'm sure, with more research, we could be more accurate, but that first approximation -- Is that a place to start with trying to break the ABCs down within the projections?

DR. WILLIAMS: Yes, and, I mean, I think that's a big step forward. It's a big improvement, compared to what we did before, because, essentially, what we were doing before we knew was broken, coming right out of the gate, because management wasn't going to address discards. I mean, red snapper is the extreme example, and so, yes, we're hoping to at least -- Again, this is why I say knowing just something about what management is considering, in terms of management actions, and just, for instance, just knowing are they even going to consider addressing discards in the recreational fishery or not, and that's -- You know, that helps us tremendously in sort of modeling, or setting up, our projections to sort of mimic that process, and it's better than what we've been doing before. Clearly, what we've been doing before is just -- It has no -- It's not very realistic, and it's not following how the management actually gets executed in the end.

DR. BUCKEL: Agreed. Thank you, Erik. Kai.

DR. LORENZEN: I just wanted to say thank you, Erik, and that answered my questions that sort of led to my hesitation in saying I'm not sure really what the answer is, but I am fully satisfied here. Thanks.

DR. BUCKEL: So, Kai, was that you're fully satisfied with being able to address the --

DR. LORENZEN: Basically, I wasn't sure exactly how these things are handled in the projections here, and he answered those questions, and, I mean, if you carry all of this through, you can chop it this way or that way,

DR. BUCKEL: Thanks, Kai. Alexei.

DR. SHAROV: That's a good discussion, and I'm not sure that I, you know, fully followed it through, but, anyway, at least to my understanding, and that's probably superficial, but I think, to

answer the general question as to whether we could split the ABC after the projections are being made, or past the assessment and while doing the projections, within the sectors, et cetera, I would say, you know, technically, yes, it's absolutely possible.

Practically, what it would require is we will have to step away from the current, you know, structure of the projection model, which Erik talked to us about, and develop a different one, and that would be the principal challenge, is to develop a sort of methodology and have it approved for how we simulate forward separately the removals, per se, by each of the sectors, commercial and recreational, and the discards. You know, as we talked, currently, we're using, you know, combined selectivity to project forward from the terminal year, and then we come up with the total effect of all fisheries combined, and so Erik is interested in knowing what the management options could be, and then how to address them in the projections.

In order for us to be able to do this, we need to separately model each component, and maybe there could be some sort of middle solutions, but they would depend on just a species, and so a stock-by-stock approach, and you could sort of modify, and so that's the way I see it, and maybe it's just a superficial view of this, but that's what I've got out of our discussion. Thank you.

DR. BUCKEL: Thanks, Alexei.

DR. WILLIAMS: Jeff, can I answer to that point?

DR. BUCKEL: Yes, Erik, and I was going to ask about that, but please go ahead.

DR. WILLIAMS: So, from Alexei's comment, I gather there's a little misunderstanding. There is no need to simulate, and so I think the point I was trying to make is the fleet structure we set up in the assessment is the level at which we can break all that down into our projections, and they already are. It's in place, and so, when we set up a model that has commercial landings, commercial discards, recreational landings, and recreational discards, that's the fleet structure we set up, and we can compute sector-specific, or whatever you want to call it, fleet-specific ABCs for those.

What happens is the ratio among those fleets is set by the stock assessment, and, in particular, those last three years, and so it's good that this slide is up right here that's being shown. Those last three years in the assessment is what we use to compute the benchmark, and what that does is it locks into place the current ratio of commercial to recreational and landings to discards. The ratios are locked into place, and that's the basis for the benchmark calculation.

We can break that, by management changing things, but the question becomes how are they breaking it, and how far do they break it, to the point where we have to then recompute the benchmark, or our projections sufficiently good enough that we predicted how they might change those ratios, and it doesn't ultimately affect the benchmark, and that's the part that we don't know, and that's where we might need to run some simulations, but I just wanted to make sure that the point is crystal clear that we have -- Every projection assumes essentially an ABC for every component in our fleet structure within our assessments, and, as I've said, more often than not, our fleet structure in our assessments is far more complicated than management usually even needs, and so it's there.

It's all there, and what's happening is we just need to be mindful of how -- The assumptions of those ratios among the fleets that we're fixing from the last three years of the assessment and how management might change that, and then how we incorporate that into our projections and how and when do we need to say update benchmarks, and recompute some things, because management is headed down a very different path from the current conditions, or the last three years in the stock assessment, and so, circling back to sort of Chris Dumas' point about, you know, the 50-50 ratio, in this case, what really matters is how much the ratios are changing from the last three years of the assessment.

If everything is staying the same, then our projections are spot-on. If the ratios are being tweaked quite a bit, because of management actions, that's what we have to chase down. That's what we have to follow, and that's what we have to try and improve in our projections, is either -- Predicting that in the best way we can, and, as Marcel has pointed out, that's very much an iterative process, and so that's the complication in all of this, and so hopefully that clarifies things.

DR. BUCKEL: Yes, and that's great, Erik. It definitely clarifies it better for me, and just an observation, and you can correct me if I'm wrong, but the way we've been operating -- The model assumptions, right, because the proportion of the F landings and F discard went down the same, and so then it's not having an impact on the benchmark, but the management has been breaking it all along, right, and so we've already been in that boat, where we're moving forward -- Or in the past, those discards have remained high, or even increased, and so I feel like that part is -- You know, the management has broken the -- As you've mentioned before, the projections weren't matching what was happening on the water.

DR. WILLIAMS: Yes, and just to -- If this helps to explain how that gets broken in that particular case, in the case of landings versus discards, it's more likely to break, because they have very different selectivities. You know, discards tend to be smaller fish, and often are driven by minimum size limits, and landed catch are the bigger fish, and so they're very different selectivities, and so it doesn't take much of a change in the ratio between landings and discards to, quote, break your benchmark, whereas say the difference between commercial and recreational -- In some fisheries, it might not be much difference, you know, because they're both hook fisheries, in a sense, and they probably catch very similar selectivity on the multispecies fishery, and so, therefore, that ratio we can sort of push to bigger changes and not really break the benchmark, so to speak, because those selectivities are similar enough, and so I hope that helps too in understanding.

DR. BUCKEL: Yes. Thank you. Kai.

DR. LORENZEN: I think -- If I sort of can summarize the whole thing, obviously, we can get, you know, ABCs separated by sectors and discards and landings out of the projections, and the only real issue then is that if, either inadvertently, or because the council decides to take action that really changes say the level of discarding, right, then you would have to go back and check whether the benchmark is still valid. Is that a good summary of where we are?

DR. WILLIAMS: Yes. Very good, Kai. Thanks.

DR. LORENZEN: Thank you.

DR. BUCKEL: Alexei.

DR. SHAROV: Just a quick follow-up. Thank you, Erik, and that was a very good additional explanation, and I follow it. What I meant, mostly, is that what you call the changes in proportions, and what I described for myself, is essentially a different model for each fleet, as you described them, as to how they're going to change depending on the management actions, and mostly, of course, it's in relation to the recreational fishery, right, and, I mean, if we have the ABCs and ACLs that are constraining, which is the case for so many stocks, and the decisions are being made on, you know, the bag limits and size limits, which immediately will affect the discard level.

What I was thinking about were the models of, you know, discard rate as a function of the different management options that could be taken, and then interaction between the fleets as well, and so -- That the level of detail depends on how stable the regulations are, or how much of a change is expected, and so, yes, and so that's what I thought that this component should include, and that could be either relatively easy or almost impossible, but thanks for the clarification.

DR. BUCKEL: Chip.

DR. COLLIER: One of the things that could be a risk here for the council is, typically, the way that they're doing allocations right now is based on landings only, and that's the more certain piece of information that's coming out of stock assessment and being used in management. When you go into developing an ABC for the sector specifically, you are going to have to reallocate the discards as well, and so that's going to be -- They're going to have to develop new methods that will include discards in that allocation discussion.

That is a very uncertain piece of information in the stock assessments, and in management, and it could lead to some potential difficult conversations, and so, to me, that was one of the risks that could come out as they're trying to do the sector first and discards later type of divvying up the ABCs. I don't know if the SSC feels the same way about that, but I think that part is a bit of a challenge that the council will have to wrestle with, because they have only -- The way that they've typically used, or done, allocation has been based on landings. I don't think that I explained it well, because I'm hurting Genny's head.

DR. BUCKEL: So, Chip, that might argue for breaking -- For using the projections to inform that breakdown of the discards into recreational and commercial. I think the issue is something that we talked about at a recent meeting, was where the -- You know, the commercial discard information has been -- We're seeing that decrease, right, suggesting that there's been -- Because it's self-reporting mostly, and that maybe those commercial discards may be biased low, and so that's one potential issue with using that approach. Erik Williams.

DR. WILLIAMS: Yes, and, just to help hammer the point home, I think, you know, the notion of a discard allocation is -- At least the way management has been going now, it's sort of nonsense, because the discards sort of fall out from the management actions, and it's not like they're controlling discards, in either sector really, for that matter, and so the discards are sort of a byproduct of the management actions on the landings themselves.

Now, if there was actually a control on discards, such as you were monitoring, and then you shut the fishery down when you hit some discard limit, then that's a different situation, but we're not

there, and so recognize that, and this gets into -- You know, what we want to do is get to the point where we can have predictive dynamics of say, you know -- If you take a recreational fishery, and you're going to cut the landed catch in half, well, what's going to happen to that effort, and what's going to happen to those fish that would have been caught that are not allowed to be kept because the catch has been cut in half?

Well, those are likely going to turn into discards, and so that's part of this dynamic of, well, we need to recognize that that dynamic might occur, and discards are actually going to go up, and so that's the area of research, and that's the area where we have very little understanding of those dynamics. We have a little bit, but not enough to, you know, nail it down, and so this is where research would help us out tremendously, is understanding those sort of simple dynamics of, okay, if you reduce a catch, under certain conditions, what's going to happen to the discards, and being able to model that and make better predictions of basically the outcomes of management actions.

DR. BUCKEL: Genny.

DR. NESSLAGE: Well, I agree with you completely, Erik, but I think, at this point, if you wanted to move forward with it, you could assume that they're all going to become discards, until proven otherwise. Would that be a bad assumption?

DR. WILLIAMS: No, and that gets to -- That's a great one. I mean, that gets to my whole point of first-order approximations, and let's at least get to something that looks reasonable, a first-order approximation, and then maybe refine it, with more research or something like that, but that's exactly what I'm hoping to move forward on, is exactly that notion, and at least let's make a reasonable first-approximation assumption, rather than what we've been doing before, which is just clearly wrong.

DR. BUCKEL: Marcel. Chip and then Marcel.

DR. COLLIER: So I'm worried about the statement that it's nonsense to think that the council hasn't addressed discards. They have done things to try to address discards. They have spawning SMZs to protect fish during spawning seasons, and they have MPAs out there, and they have seasons for the deepwater fish, to prevent people from going out there for snowy grouper and blueline tilefish, two cooccurring species, and there are mechanisms that the council has done out there to address some of the discards. Sometimes it hasn't been all that effective, but they are trying, and it's not nonsense. There's been efforts, and it's just whether or not different things have been coming out and if we have information on whether or not they've been successful in addressing some of the discards.

DR. WILLIAMS: Chip, I hear you, and I apologize. The use of "nonsense" was probably a poor choice of words. I guess my point was that, when I think of an allocation, I think of, okay, we're divvying this pie up, and this is our target, and we're going to hit that target, and that's not really happening with discards. What's happening is, yes, there's efforts to reduce discard mortality, and reduce the level of discards, but it's never with a target in mind, and it's never with an allocation in mind, and it's with, okay, we're just going to reduce it, which is a good thing to do, but, when I think of an allocation, I think of, okay, we're divvying the pie up, and we're going to try and get that exact slice of the pie, and maybe that's just me thinking of allocations in that way.

DR. BUCKEL: Marcel.

DR. REICHERT: Of course, on top of everything, management of one species will impact other species and fishing behavior, and so, on top of that, that gets even more complicated, and so, if this issue is looked at further, in terms of what are the potential impacts, for instance, like Genny mentioned, in a retroactive manner -- I'm not sure if it's possible, but it may be good to look and see what other management actions may have impacted the population or fisher behavior, and, again, this gets really complicated, but there may be examples where -- Especially within the snapper grouper fishery, where you can potentially take a look at that and see how that may affect bycatch and other factors. Thanks.

DR. BUCKEL: Okay. We've had excellent discussion on this agenda item, and I would like to get the action items back up, and we'll address them to the best of our ability at this point, and so the first one is to review an evaluation of how discards are addressed in applying sector allocations to develop ABC and ACL, and so that's both from Erik's presentation and then the publication talked about as well. That second action item is discuss the implications of the publication, and that's the Bohaboy et al. paper, the implication of the results from that paper towards this sector allocation, and then should this alternative method be added to the terms of reference for future assessments? Genny.

DR. NESSLAGE: A question. The last question about terms of reference, is this where Erik, or Chip, were envisioning the council, given they provide feedback on TORs, would provide some feedback on what sort of management they might like to explore in those projections?

DR. BUCKEL: Kai and then Chip.

DR. LORENZEN: Or is this the much simpler question that Chip was asking of can we break this down, and so I'm not sure what we're asking.

DR. COLLIER: It's the simpler question. We feel like, in order to reduce the Science Center from having to do two very different projection runs, let them know in the beginning that we would want it divvied up either by sector or landings and discards first, and then the other one, and, that way, it makes it much clearer, and it only leads to one potential outcome for projections. As you've seen, we get up to sixteen projections, and so that would be a ridiculous workload, trying to manage that.

DR. BUCKEL: Kai.

DR. LORENZEN: Or is the question just should it -- Should the ABC, when it's reported -- Well, there's the total, which is sort of really the basis for the benchmark, but it's derived by adding up the sector and the discard and landings ABCs, right, and we can just report all of those, and then you can combine them or split them as you like.

DR. BUCKEL: I think --

DR. LORENZEN: I'm not sure it's an alternative method. I mean, is it -- Because, you know, we create the whole by adding the components, right, and, if we just report the components, then we have those.

DR. BUCKEL: Yes, and that's my understanding too, Kai. I think what we want to capture here is some of the -- There's the first approximation, using Erik's terminology, that we want to move forward with, but with a big caveat that the management -- If something changes from status quo -- Right now, it's going to be -- Like say it's for black sea bass, and the current projections are assuming status quo, and it's not perfect, because maybe there's another way, like Genny just mentioned, of, instead of just having the rate, the instantaneous rate, of F discards remaining constant, maybe you would move catch into discards, and that's another approach, and so we could move forward with the first approximation, based on status quo management, but the big caveat is that, if the management changes, that those projections, those sector-specific ABCs, would not be correct and that this management projection process would be iterative. I think something in there, maybe a parenthetic statement after "first-order approximation", that this is assuming status quo management. Genny.

DR. NESSLAGE: Assuming status quo management and landings convert to discards, correct?

DR. BUCKEL: Erik can chime-in on that. I think, for black sea bass, it's a constant F discard, and so --

DR. WILLIAMS: Yes, Jeff, that's correct. For black sea bass, we just assumed a constant discard, and we didn't do the conversion, and I think Alexei raised that issue, and we discussed that, that, yes, that's not being accounted for. It could occur, and it's less likely to occur in the commercial sector, and it's more likely to occur in the recreational sector.

DR. BUCKEL: Genny.

DR. NESSLAGE: But this is not about just black sea bass, and this is -- So, when that occurs, that's fine, but not all of our assessments are that way. This is a more generic question, is it not?

DR. BUCKEL: You're absolutely right, and so there's different ways, and maybe that's a for example. For example, constant F, or converting landings to discards, and those are both on the table, right? Marcel.

DR. REICHERT: I think it would be good to add a comment to what Erik said earlier, that, if the -- In case the ratios change too much, that it may require a recomputing of the benchmark. Is that correct, Erik?

DR. WILLIAMS: Correct.

DR. BUCKEL: Alexei.

DR. SHAROV: But how do we know that the ratio changes when we're doing projections? Is that because we're making certain assumptions that, following such and such management decision, that the ratio will change that much, and is that the idea?

DR. REICHERT: I think it's important to put -- You know, we discussed this, to put some of these caveats in there, that, you know -- As Erik said, we don't know where that cutoff is that you have

to go back, but I think it's important to at least mention that as one of the complications of assuming the status quo and what may be needed if that status quo is no longer valid.

DR. SHAROV: I was just trying to follow this, and, in terms of timing of the event, if we say discards to landings ratio changes -- Do we talk about the changes in the stock assessment? Is that what it would be based on, or in the projected period, and that is in the future? Then we have to have some sort of model, some sort of idea, as to how it is going to happen, and for what reason.

DR. REICHERT: It's my understanding, and maybe change sufficiently as a result of management actions, and so I'm strictly speaking of the projections here, and does that clarify, or address, your question, because, Erik, that was the point that you were making earlier. You can make your projections assuming status quo, but, if management actions result in a large enough change in those ratios, then you may have to go back to your stock assessment, correct?

DR. WILLIAMS: Not necessarily all the way back to the stock assessment, but at least recompute the benchmark, and that does have implications. If you recompute the benchmark, in theory, it could change stock status, depending on how close the stock is, but, yes, that's correct.

DR. REICHERT: Okay. Thank you.

DR. BUCKEL: Chip.

DR. COLLIER: Just to remind the SSC that the ACL, or the allocations, are not the same as what these ratios are, and so the allocations that are developed by the council are used to separate the ACLs, but, quite often, those ACLs are not fully realized, either one sector or the other or neither. If you look at something like black sea bass, the ACL has not been met in quite a number of years, and not even 50 percent of it has been met, and so, looking backwards, it's -- The ratio -- Just reminding whoever is listening that the ratio that is used for this is not necessarily equal to the allocation, and so, even if the council does decide to change the allocation, it might not require going back and changing some of these projections, because some of these catches might not be realized in the first place.

I think we're getting to a point where we're looking at these projections, and trying to develop the best approach, and, you know, people -- People don't act logically all the time, and so trying to figure out a logical approach to predict what's going to happen might not be best, and maybe we just need more regular updates and interim analyses to provide guidance, as opposed to trying to project forward a number of years, especially for something like black sea bass, where we have a trend in recruitment, where it seems to be decreasing, but we have no way of knowing how that trend is going to continue in the future.

DR. SERCHUK: Can I make a comment, Chairman?

DR. BUCKEL: Go ahead, Fred.

DR. SERCHUK: Really, I just want to make sure that I'm understanding the terminology here. Are we -- When we say "discards", aren't we talking about dead discards, because the catches -- The landings are dead, and, you know, if we -- Now having regulations that basically say, okay, particularly in the recreational fishery, about descending devices and so on and so forth, we're

really talking about the mortality caused by the act of fishing, aren't we? I don't mean to be too critical here, but I think we're talking about dead discards. Are we not?

DR. BUCKEL: Yes. Dead discards.

DR. SERCHUK: Thank you.

DR. BUCKEL: Thanks for the clarification, Fred. Others? Marcel.

DR. REICHERT: Given Chip's question, would it be useful to list there, or I'm not sure under which action point that falls, but that it doesn't matter, for the outcome, whether you split it up discards or landings first, and then fleets, or sectors, or whatever terminology we want to use, or do it by fleet or sector first and then discards, because my understanding is that was a question that the council had asked us.

DR. BUCKEL: I think Erik said that they're modeling those all separately, and so there's no need to split things out, and now it's all being modeled separately and then being combined into one, and so, as Kai mentioned, in the terms of reference, we can just ask for them before they're combined, and that's my understanding.

DR. REICHERT: Yes, and there is no difference in the outcome.

DR. BUCKEL: Correct. There is no split.

DR. REICHERT: We can wordsmith that.

DR. BUCKEL: So we had quite a bit of discussion about research, and I would like to capture some of that in this document, so that can be -- When we go to research, we have the overall research recommendation document that we can pull from this, because there was some really good ideas on some research questions that could help with this in the future, and so, if anyone has some notes on that that they could chime-in, and, while you're looking for those, Alexei.

DR. SHAROV: Thank you. Yes, I think I'm going around the same idea several times, but, essentially -- I mean, if we look at this, the big picture here is that we're trying to do -- Well, we estimate the total ABC, and our task is not to kill more than X number of fish that the TAC tells us, and it's relatively simple to achieve this for the commercial fishery, even though their discards are rather uncertain, but, nonetheless, there's an estimate.

It's much more difficult with the recreational, and particularly with discards, and that's essentially this wild parameter that we're not predicting, and that's what we're trying to sort of figure out, is can we continue, or can we develop the management actions that would empower us to actually keep control of the discards within the prescribed level, but, so far, it doesn't seem to be that realistic. For that reason, I don't think that splitting it into -- Initially into catch and discards is going to be helpful, because it's going to be good only on paper, and so, until the time that we develop models -- Until the time that we understand better the relationship between the discards level, and particularly the dead discards level, and the size of the fleet, the current regulations, and how changes in those regulations affect the discards, we really have to have a model of discards as a function of whatever number of parameters we're using.

Currently, in the base scenario, it is also a model of discards, where it just simply assumes that the ratio of the catch to discards, or landings to discards, will remain constant, and that's the simplistic model that we're using, but we know that we're failing with that, because the responses are much more complicated, and, therefore, the discards, given all the uncertainty, are still, you know, behaving much different from what we actually predict with the simplest model. If we want to do a better job, we need to say that we need to develop the research, do the research, and develop effective predictive models on dead discards as a function of principal management tools.

DR. BUCKEL: Yes, and that's one of the research ideas, and it's very similar to one that I jotted down from Genny, where it was -- Genny, you can help with the wordsmithing, and Alexei, and so it's coming up with a relationship between the fisher response to management actions, and what's the magnitude of that response.

DR. SHAROV: Just as an example, I think I mentioned it in the spring, that there are at least a couple of models being developed that we predict the recreational catch and discards depending on the current regulations and the estimated size of the recreational fleet. With the other species, like for example striped bass, currently, we are developing alternative management measures, and we're estimating the new selectivity occurs -- It's based on the proposed size regulations, and sometimes bag limit, and even seasons, and so these are all sort of the ad hoc models that -- The relationship between the catch and the dead discards that we are expecting to observe for these new regulations, in order to achieve the targeted reduction, and so these are things that -- I mean, if we wanted to make a step forward from what we're doing currently, that's what we need to start developing.

DR. BUCKEL: Agreed. Thanks, Alexei, and Judd has captured that, and so if you could take a look at the screen and let him know if you need anything wordsmithed. Genny.

DR. NESSLAGE: On that last sentence, I think if we could flesh that out, to your earlier question about potential research recommendations, that it would be nice if we could say that we are recommending the historical relationship between management action and achieved discard, or estimated discard, rates be analyzed to inform future -- To help inform future projections, should this approach be adopted by the council, something like that.

DR. BUCKEL: Are there other research ideas that were covered that we want to capture here? Genny.

DR. NESSLAGE: I don't know if the SEP folks would like to comment, but I think it would be really -- Someone mentioned earlier that it would be good if this was conducted with some social scientists onboard, because this sheds some light on angler behavior as well, and so, you know, the models are what they are, but interpreting them would be really helpful. So maybe some advice on wording would be inclusion of social scientists in this research would be helpful for analysis, design, and interpretation.

DR. BUCKEL: Excellent. Thank you, and so I think it was John Carmichael that brought up the social scientists, and he also brought up something else, which we don't -- Here, we're talking about historical relationships from prior management actions that the council has used, but what about some novel management actions, and he mentioned the time closures and area closures, and

how those might impact the effort, and so I think that's a potential research -- I guess there's been some -- There have been time in the South Atlantic, and so that would fall under the historical relationship, but maybe the area would have to be listed explicitly, Judd.

So when does a season, or area, closure impact effort, or how does that season closure, or area, impact effort shifting, and, you know, when do you -- What's an effective closure that's going to reduce effort, other than just shift it? John, does that get at what you were -- Thanks. Genny.

DR. NESSLAGE: That would involve simulation studies, and not historical analyses, correct, and so that would be more in line with what Kyle and Scott and our crew did with red snapper, correct, and so it would be more what-if scenario analysis, and is that what you're suggesting?

DR. BUCKEL: I wouldn't, you know, limit it to that, and it could be meta-analysis of the literature. Fred Scharf.

DR. SCHARF: Just a note, and I sent Judd an email with like four or five bullet points under the first bullet that he can add, and he doesn't have to do it now, but, when we come back, at the end of the meeting, to review it, and it's just a high-level summary of Erik's presentation and some of those points, and so it would be like under the first bullet, that says, you know, review the evaluation of how discards are addressed in applying sector allocations, and it's just sort of a few bullets there.

DR. BUCKEL: Okay. I think -- I'm just going to look at those agenda items on my computer, and I think we've addressed all the action items, Judd, and I think we've got those covered, and so I think now is a good time for a morning break. We will break for ten minutes, and we'll start back at 10:22 with vermilion snapper.

(Whereupon, a recess was taken.)

DR. BUCKEL: Okay, everyone. If you could come back to your seat. All right. Next up on our agenda is the vermilion snapper interim analysis, and you can see the Attachment 6a for the presentation, and 6b for the report, and 6c is an excerpt from our October 2022 SSC meeting final report. Our presenter is Nikolai Klibansky, and, Nikolai, Judd is going to hand things over to you, and give you the ability to share your screen here.

DR. KLIBANSKY: Okay. Sounds good. Can you hear me okay?

DR. BUCKEL: Yes, and we can hear you great. Thanks.

VERMILION SNAPPER INTERIM ANALYSIS

DR. KLIBANSKY: Okay. Well, thank you. I'm Nikolai Klibansky, and I work with the stock assessment group in Beaufort, and I'm going to be talking about this interim assessment of South Atlantic vermilion snapper. It's something that I've done a lot of the work, you know, the actual number crunching and coding, but it's been collaborative among our group.

These are some efforts that I was not involved in directly, but I wanted to kind of sort of set the stage and look back into, you know, the assessment history for the South Atlantic vermilion snapper stock, and so I sort of educated myself a bit, looking back at these different assessment reports, and, you know, there could be some things that I'm missing here, but, basically, there was a benchmark assessment, you know, a full age-structured stock assessment, done in 2003, back in SEDAR 2.

There was a 2008 update, and another 2012 update, which both of those SEDAR numbers are correct, and they were both considered SEDAR 17, and then the most recent assessment was 2018, a standard assessment, which I think no longer exists, but was kind of a hybrid between a benchmark and an update, and that was SEDAR 55. All of the reports are linked here, if you click on any of this text, for your own further reading.

Just to -- You know, I kind of went through those reports and just grabbed some of the basic results, to kind of get a sense of, you know, how the stock looked at these different points in time, and so this table shows the benchmark assessment, the update for 2008, the update in 2012, and then the standard assessment in 2018. The model is just describing a -- I guess, initially, it used a catch-at-length model, and then, from SEDAR 17 on, it used a catch-at-age model, and then just some of the basic parameters that often affect the assessment the most.

For the first couple of assessments, the stock was considered not -- For the two most recent assessments, the stock was not undergoing overfishing, and, for all four assessments, the stock was not overfished, and so, due to, you know, resource limitations, and trying to be efficient with our overall assessment efforts in the Southeast, it was determined that, instead of doing a full stock assessment update, or I guess an operational assessment, in the current year, that we would do this interim analysis.

Prior to that, and I know you're familiar with some of this from past meetings, but our group in Beaufort looked to basically do some simulation work and get a sense of, with some management strategy evaluation, get a sense of how these interim analysis procedures, ways to update catch advice, between assessments -- You know, how they affected management performance, and so this first bullet here is just a reference to that document, the report from 2022 that we presented, I guess in the October 2022 meeting. I just got a communication that, actually, SEDAR 17 was also considered a benchmark, and so a little typo there.

At any rate, so we presented this work at the 2022 SSC meeting, which it seems like a lot longer ago, but I guess it was just a year ago, and then, in the spring of this year, Erik Williams presented a presentation kind of going over our plan to conduct an interim analysis for vermilion snapper to present in the fall, now, and so that is what I'm going to be going over.

This is a modified slide from one that Erik had presented about a possible interim adjustment process, and I think what I mainly added here is this sort of breakdown of Item 1, and so, you know, this is possible because Items 2 and 3 are, you know, beyond what we do at the Science Center, but so this first bullet is indicating that the Center staff conducts scientific analysis, and so what we ended up doing is computing the adjusted catch, which is sort of the meat of the actual interim analysis, and that's really what we evaluated in that simulation that we reported on last year.

What we discussed also, you know, when we had those numbers, is kind of looking at how our projections from the previous assessment, from SEDAR 55, how those compared to a more recently updated index, and then, also, kind of looking at how projected catch related to observed catch, as well as we could tell from sort of unofficial catch that we get from the NOAA Fisheries one-stop shop, which I will show you in a little bit.

This is sort of our part, and that's the part that we're going to be focusing on today, and then, after that, I will be really interested to hear discussion, and field questions, about this work and hear you review the catch adjustments and, you know, at some point make recommendations to the council, and then, finally, the council will make decisions about implementing that SSC recommendation, and so I'm certainly not dictating what happens, but that's sort of the anticipated process.

Now to get into the methods of what we did here, which are -- You know, this first step is really quite simple, which is part of the appeal, but, obviously, there's, you know, caveats to doing these simple calculations, and so the data that were required to compute adjusted catch is, one, information that we get from the SEDAR 55 vermilion snapper assessment output, and so we're grabbing the terminal year, and then this observed trap video index and the predicted trap video index, and then, also, and this is sort of doing the heavy lifting here, getting the vermilion snapper standardized chevron trap index from the South Carolina DNR 2023 trends report.

In a lot of ways, for this, you know, a lot of that work was -- A lot of what goes into this adjustment is really done by the South Carolina DNR, and, in a lot of ways, our adjustment is really interpreting -- It's making a simple calculation based on that index.

This Equation 1 up here is this simple calculation that we're using to calculate this adjustment, and so A is the catch adjustment, and IRCN is the average trap index from the three recent years, and I will note that that is from the trends report index, and the reference value, I_{ref}, is also from the trends report index, but, where we grab the terminal year from the last assessment, this is where -- You know, it's a very simple thing, but just to identify what was the year in which catch advice was last provided from an assessment, and that was 2016, and so, basically, you're just comparing this average trap index, and I crossed out 2020, because there was no 2020 value, and so we have the last three years of the index, but 2020 was not available, because of COVID, and so it's really the average of these last two years, relative to the reference value from 2016.

We're basing this approach on work done by Huynh et al., and I don't know that I have that reference in this presentation, but it's certainly in the report, and so they put forth a couple of different ways to kind of incorporate uncertainty in the index into the computed adjustments, and so one of the main ways is to incorporate the standard deviation, you know, kind of an error estimate, associated with the index into the computations, and so this sigma-hat is the standard deviation of the residuals from the assessment model fit to the trap video index from SEDAR 55, and so this is where the computation of the sigma-hat -- It's where, as you can see in Equation 2, where the index -- The observed index and the index fit from SEDAR 55 comes into use, and so we're otherwise not using that version of the index, except to compute this error estimate.

The rest of this slide is just describing these inputs, and the SD is just a standard deviation function, and $I_{bam,ob}$ is the observed trap video index from SEDAR 55, and then $I_{bam,pr}$ is the predicted trap video index from SEDAR 55.

DR. BUCKEL: Nikolai, Alexei has a clarifying question.

DR. KLIBANSKY: Sure.

DR. SHAROV: Nikolai, good afternoon, and can we ask a question about the calculation component now or at the end of the presentation, whichever you prefer?

DR. KLIBANSKY: Whatever is fine with me.

DR. SHAROV: So I'm trying to understand, and there is certainly good logic behind this formula for calculation of adjustment coefficient alpha, but I see that the sort of the change is going to be of a different scale, depending on whether the recent index is higher or lower than the reference index, but we're using -- Well, but we're using the standard deviation to sort of do these modifications, and what is the idea behind that? Can you -- If it could be explained quickly. Thank you.

DR. KLIBANSKY: I think so, and, I mean, just to emphasize, and I know it's going to get confusing, because we're using both the, you know, the index produced recently from the trends report and also the -- You know, the indices from, or the observed and fitted indices, from the BAM model, but just to emphasize that the I recent and I reference are both referring to the trends report, and so just so that that's clear.

Then so, with regard to the computation of the -- You know, whatever error value you put into sigma, and, you know, there are certainly different ways that it could be done, and the idea is that you are, you know, incorporating uncertainty in the index into the calculation, and, basically, the way this calculation works is, the larger the uncertainty, the -- How would we say it? Like the more minor the adjustment would be, up or down, because, as the sigma gets larger, it's in the numerator and the denominator, and the adjustment is just going to sort of be smaller, high or low, and so we basically followed suggestions in the Huynh et al. paper that, you know, the computation of sigma, based on the assessment fit, might be a good way to go, versus, you know, we could use like the CVs from the current index, but, yes, the recommendation was to use -- Based on the index fit, and I think part of that is that, you know, the fit in the model is taking a lot of other information into account, and not just evaluating sort of the observation error around the index, which is kind of what we get from the CVs. I'm not sure if that's answering the question.

DR. SHAROV: Just to clarify, and then we'll discuss it later, if need be, and so the standard deviation here, the sigma, is the same both in the numerator and the denominator, right, and it's the sigma from, as you describe it, the standard deviation, or residual, in the assessment report, correct?

DR. KLIBANSKY: It is, yes.

DR. SHAROV: Okay. All right. Thank you.

DR. KLIBANSKY: Sure, and this process -- I mean, this is the first time that we're doing this, and I think that it's totally open to discussion, you know, if the SSC has, you know, ideas, or recommendations, about how to modify calculations, you know, for the future. Okay. Should I move on?

DR. BUCKEL: Yes.

DR. KLIBANSKY: Okay. All right, and so, in the second part of the analysis that we did -- So that's really -- That's really all that goes into the actual catch adjustment part, but the second part that we thought would be informative, you know, particularly when you're deciding how to, if to, modify management based on the adjustment that we compute, we thought that we would look at, you know, how is -- You know, how does the current management seem to be performing relative to what we expected from the projections, and how does the projected index relate to the observed index.

For this, the data that we're using are, one, the SEDAR 55 vermilion snapper P* 40 projections, the projected trap video index, and the projected landings and discards, and now you'll note, and it's not a typo, that I'm talking about -- You know, in the second bullet, the snapper, vermilion snapper, chevron trap index from the trends report, and what we're actually grabbing from SEDAR 55 is the trap video index, and that's because, you know, those are the most comparable quantities, really, and I know you're all familiar with it, and we often combine the trap and video data from the trap video sets of the SERFS survey. In the trends report, the output is the trap index, but what ended up being used in SEDAR 55 was a trap video index.

The values from SEDAR 55, as well as the index from the SC DNR trends report, and then also recent estimates of landings and discards from NOAA Fisheries' one-stop shop, and, now, some of you may point out that, you know, it's not typically my role, as a stock assessment scientist, to draw -- You know, to access and develop the landings data for an assessment, and so, you know, undoubtedly, this is just kind of a rough estimate of landings and discards, based on what I could access in the time allowed, and so I think we'll kind of interpret it with a little bit more -- A little bit more roughly, because of that.

This is now looking at resulting calculations, and now I think all of our eyes are going to be first drawn to this figure, and so this figure is -- The red dots are the values from the trap index from the trends report through 2022, and you can see that missing -- That gap is the 2020 year, when there wasn't data, and then the pink is error bands, and that is the actual CV-based error around those red points.

The black line is the predicted trap video index from SEDAR 55, and you see that ends in 2016, and so, when we compute I recent for these, what ends up just being the last two years, these two -- Basically the average of these last two red points, and we get a value of 0.96, and the reference value is this red dot from 2016, and that is 0.88, and the sigma, which is computed from -- This is where the residuals that I'm using here are actually the difference between -- You know, based on the difference between this black line and then the observed index, which is in the report, but it's not right here, but I sort of thought I would just skip that image for the presentation, but the standard deviation of those residuals is 0.61, and so this is -- It feels funny kind of presenting basic arithmetic, but, really, what we're looking at is, you know, this simple calculation here, and that gives us a value of 1.05, and so that is -- You know, basically, this approach is a suggested multiplier on catch.

The big take-home from this part is that the computation of A, or alpha, equals 1.05, suggesting a small, 5 percent, increase in catch, and so I have just a few more slides, and so, now, to kind of go

through this comparison of projected values of the index and projected landings to what we observe, these -- I have now basically added these blue lines to the previous figure, and the solid line -- The circles is the projected base value from the projections from SEDAR 55, and the dashed line is the median of MCBE runs, and the dotted lines are upper and lower confidence intervals around the index, the projected index, and so, you know, although the SERFS index doesn't really match the predicted values well for the assessment period, but the projected index matches the observed recent index, you know, I think pretty favorably, and, obviously, it's not matching the trend, but we can't really expect that, but it's, you know, kind of averaging, I think, through the observed data points. Our observation here was to say that, you know, the stock dynamics seem to be described well, and the projection methods seem to be performing well.

Now, here, I'm comparing the performance of the projections with management, and I won't pretend to know exactly what management has been doing, and I've been -- You know, this is particularly a comparison of the projected landings from that SEDAR 55 P* 40 projection, compared with this stacked bar plot of commercial removals and recreational -- It's really commercial landings and recreational removals and discards that I grabbed from NOAA Fisheries' one-stop shop, but what I think it shows is that, in the projection period, after SEDAR 55, the observed removals have been pretty similar to what was projected from SEDAR 55 and this P* 40 projection, and certainly well within the confidence bounds, indicated by these dotted lines.

You know, just as a rough conclusion to this, it seems like the management appears to be effectively maintaining levels -- Removals at these projected levels, and so basic conclusions are it seems that -- You know, we've looked at the computation of the adjustment, suggesting about a 5 percent increase in catch, and a rough assessment of, you know, evaluating the projection performance says that they seem to be performing well, and the current management seems to be basically on track, and so kind of -- To me, the take-home is that -- You know, I'm not sure what you all will decide to do with this, but that somewhere between status quo and like a small increase in catch seems to be what the analysis is suggesting is appropriate.

This is my last slide, kind of bringing us back to this possible interim assessment interim adjustment process, and I went through all of these sub-bullets from 1, and now I'll be happy to take questions and hear your discussions about what to do next and how to work with these results, and so thank you.

DR. BUCKEL: Thank you, Nikolai, for the very clear presentation. Do folks have questions for Nikolai? Marcel.

DR. REICHERT: Hi, Nikolai, and thank you for that. A quick question on Slide 10, and the U is the -- That's the CPUE from the trap survey, or the index, and I assume that's the standardized normalized CPUE?

DR. KLIBANSKY: It is. It's the standardized normalized CPUE, and both have a mean of one, and so both the index here provided by SC DNR and the index from BAM, from SEDAR 55.

DR. REICHERT: Okay. Thank you. Then another question, if I may, and you used one year for I reference, and have you guys considered to discuss maybe using multiple years for that I reference, like equivalent to what is done in assessments for the terminal -- For like the average of the last three years?

DR. KLIBANSKY: Yes, and, I mean, I don't remember discussing that, and certainly that's a possibility, and so I think what you're saying is like, for the recent -- You know, if we flip back to this calculation, for the recent value, we're using, you know, an average of recent values, and the reference is just the value from one year, and so we could, you know, consider using an average of multiple years. I mean, the reality is that, as simple as these calculations are, there is various ways to kind of buffer the adjustment, and so, I mean, even if you look at the Huynh et al. paper, and I guess I will editorialize for a moment, if that's okay.

Anyway, in the Huynh et al. paper, they even have calculations for including a multiplier on the sigma value, and so you could actually, you know, kind of tune how you wanted the adjustment to be, based on how -- You know, how kind of confident you were in the index, sort of if they couch it in terms of, you know, how much risk you want to take on in adjusting catch, and there's just all different ways to sort of tune this, and so we've kind of focused on -- We've thought about doing other things, but we kind of just decided to focus on the most basic calculations and then get this dialogue going with the SSC and sort of try to figure out like how you all would, you know, respond to these calculations and what more you might want to see before recommending them for use, that kind of thing.

DR. BUCKEL: Alexei.

DR. SHAROV: Nikolai, I just want to come back to this correction factor, and so the index is a standardized index, and, as I understand it, it's assumed to have a normal distribution, correct, and so we have an estimate of an index, and then we have a standard deviation, and then we have a ratio of two indices and the ratio of two normally-distributed variables, and so we'll have also a distribution with the mean of which would be equal to the means of the indices here, and the distribution around it, and so -- Right?

So I don't see why, to account for the uncertainty, we introduce this way of correction, which what it essentially does it slightly reduces your adjustment coefficient, if you were to use just the expected values, or your actual indices values. If you just simply do the ratio, you will get a slightly higher, you know, if there was an increasing index, a slightly higher adjustment coefficient, or a slightly lower, and so we artificially are sort of reducing the amount of change, and I don't see, like statistically -- Why is it justified?

DR. KLIBANSKY: I am just trying to think of how to respond. I mean, I guess my use of this particular calculation is more for, you know, using what was presented in that simulation by Huynh et al., that we sort of emulated, and so -- Maybe this is a little bit of a cop-out answer, but I think there is different ways to do it, and so, again, you know, as I was mentioning, with that buffering constant, you could choose to -- The buffer constant basically is a multiplier on sigma, in the numerator and denominator, and so you can set that value to zero, if you prefer to basically have the adjustment computed just from the ratio of the recent value and the reference value, as you suggested.

I know that doesn't exactly -- I feel like that doesn't exactly answer your question about why is it statistically justified, and I think that, statistically, the idea is that you're including the -- You're trying to be as objective as possible in coming up with a way to, you know, buffer the adjustment

against -- It's just sort of, you know, not react too quickly if the index goes up, or too quickly if it goes down.

DR. SHAROV: Right, and so certainly I agree with you that it operates as a sort of precautionary tool, and that is true, but, you know, it operates it in one direction only, and that is being precautionary. That is, if your current index is higher than the reference one, you adjust it upwards, but not as much as if you were to use just the actual ratio, and you adjust it to a little bit less, and vice versa.

If the index is less than the reference, then you adjust it downwards a little bit less, and not to the full extent as if you were to -- But I don't think it has anything to do with sort of the size of the standard deviation, but, most importantly, it ignores the fact that, actually, the deviation could be in the opposite direction, but we just choose to ignore it, because our principal goal is to be more cautious here, and so we don't want to make an adjustment that would be, you know, higher than what you do in this case. Anyways, I guess one could see the reason why you do this is you're constraining it. I don't know.

DR. KLIBANSKY: If I can -- You know, part of my response to, I guess, just any discussions of exactly how this computation is executed goes back for a moment to the simulation work that we did which assumed that -- The simulation work we did, you know, basically had these assessments that were simulated to be every five or ten years, and then the interim adjustments were computed -- In some of the scenarios, the interim adjustments were computed by different ways every year in between the assessments, and then what happened was, in the simulation, and this is what Huynh et al. did as well, and so we kind of just -- You know, there's so much you can do in the MSE, and, you know, only so much time to do it in.

We sort of started with what they did and just tried to make it as applicable to the stocks that we are concerned with here, and what we did was we had that catch advice put into effect in management, in the simulation, in the next year, without modification, and so it just went into effect, and it was -- You know, the implementation was perfect, and we know that that was a simplifying assumption.

Where I'm going with that is that one thing that we've discussed in our Beaufort group a lot over the -- You know, really, I don't know, but the last year-and-a-half, maybe something like that, is, you know, we can produce these adjustments, and, actually, we can produce them for lots of stocks very quickly, and like you could probably, while we're sitting here, go through this SC DNR trends report and do these calculations for any number of these stocks that are in there.

We can produce these, but then what happens after that, and I think that -- The reason I'm mentioning that is because I think that there's an interplay here between what the SSC recommends and, you know, what management does with these computed adjustments and actually like what we compute, and so, if there was some mechanism put into place, and I'm just putting this out as a possible, but, you know, if there was some mechanism put into place that said, yes, we're going to produce -- The Science Center is going to produce these adjustments, by some equation that we agree on, and then, next year, it's going to go into effect, and it's going to be that way, and, whether it's high or low, there's going to be no discussion, and it's just going to go into effect that way.

Okay, and so that's one possibility. I'm not sure that that's realistic, and I'm not advocating that, and I'm just -- You know, it's just a possibility, and then there's some other end where, you know, like here we are now, and we're looking at an adjustment computed as, you know, a 5 percent increase, and I'm not that involved in the implementation part of this, but I get the sense that it's a lot of work, and I don't know, you know, and will management -- Is it worthwhile for management to go through the whole process to make some amendments to adjust catch by a small amount?

I think that, in some ways, before we really dial-in the computation, or while we're dialing in whatever computation we would want to use for these adjustments, you know, beyond this sort of basic one that we kind of grabbed from what Huynh et al. did, there's kind of an interplay with what management does with it. That part of it -- You know, if you kind of go back to the simulation context, it could have a big effect on management outcomes long-term, and so I know that's kind of editorializing, and getting a little bit off of what you asked, Alexei, but it's something that I've been thinking about a lot, and we've talked a lot about, and I think is important to this discussion.

DR. SHAROV: All right. Thank you, Nikolai. That is good thoughts to sort of think about for us, but I just want us to sort of make a -- Or at least I am making it clear for myself that this is a reasonable approach, but just the fact that it focuses on sort of providing a buffer towards reducing the risk of overfishing, right, and so we are adjusting for -- We are sort of making adjustments at a small scale, so that we want to avoid making a mistake and adjusting catch upwards too much or adjusting it actually downwards too much as well.

You know, we, obviously, are ignoring here that, for example, if, you know, the actual catch -- If it's a normal distribution, your actual index could be, you know, say 50 percent higher than what we've estimated it, and there is an estimate of uncertainty for the reference point. If the reference point index was actually smaller than what we think it is, then the ratio -- That there is a certain probability that the actual ratio is going to be much higher than what it looks like, but we ignore this again, just simply because we focus on trying to be precautionary, and that's totally fine, as long as we sort of recognize that that's what we're doing, and I think that's what is the purpose of the use of the standard deviation here, and so thank you.

DR. BUCKEL: Genny.

DR. NESSLAGE: Thanks, and thank you, Nikolai. This is great work. I'm sure you and your crew have discussed the answer to the question that I'm about to ask, and so I'm really excited to hear your thoughts on this, and the -- As I understand it, the underlying implicit assumption of this interim analysis approach is that the index tracks abundance, and clearly, based on the last assessment, this index is not fit well, as you already mentioned, and I'm looking at Figure 49 of the last benchmark.

There were some sensitivities run that upweighted this particular -- Or I guess a different version of this index, if I'm understanding correctly, and those upweightings brought us either very close to overfished, and probably overfishing, if I'm interpreting those correctly, and so I guess where I'm going with this is your implementation of this is great, and I thought that your MSE was great, but, when the rubber hits the road for this particular species, do we actually think this approach is appropriate for use in management, given the uncertainty, potentially, in the stock status that would be implied by the trends in this index that you're using for the interim analysis? I would appreciate your thoughts on that.

DR. KLIBANSKY: Thanks for the question. Well, I guess I don't want to hedge too much, but, you know, in some respects, if we get back to why we're doing this for this stock, it's not because -- Well, let me first say that you're absolutely right that this index is not fit well in the assessment model, and it's not, you know, quite the mismatch that you see in this figure that's on the screen now in Slide 12, but it's not too far off, and you're right that there was a whole bunch of sensitivities to try to deal with that, and, ultimately, the decision was made to go with a weight of one, because, it was basically -- Again, I was not here for that assessment, and I'm not an expert on it, but what I got from the assessment report for SEDAR 55 is that -- As is often the case when you upweight one dataset, and, in this case, you upweight the index and get a better fit, and you're losing fits to other things, and so we decided that that wasn't, you know, a good way to go. Anyway, that was just to address that point that you made.

This is actually, I think, now one of our more complicated assessment models, if you look at the fleet structure and the number of indices and so on. There's a lot going on in this assessment, but the decision was made, and I'm not actually exactly familiar with who made the decision, and I wasn't involved, but to do an interim adjustment instead of a full stock assessment, you know, to try to be more efficient, and presumably there was less concern about this particular stock.

We had a bunch of discussions, among us, about how much to kind of dig into the past assessment, how much to look at other data sources, and we kind thought that, you know, at some point, and this is a simple analysis, and, at some point, we're, you know -- At some point, I think we have to just accept the simplicity of it or suggest that, you know, we don't think it's -- We think it's oversimplifying and should do something other than this before, you know, changing management. I'm not sure that exactly answers what you're asking about, but I guess I will pause and let you respond.

DR. NESSLAGE: Sorry you're not in the room to see my faces, but I guess I'm just trying to think this through myself. The implication is that, like on your next slide, is that these catches are reasonable, and we're not going to do much harm in this interim period, between now and the next benchmark, if we continue, or even slightly increase, the catches, or landings, but the underlying risk that we would need to accept then is that this -- We're assuming this index doesn't actually track the population, but we're using the index to track the population.

DR. KLIBANSKY: No, and I totally get your point, and so that's better said than I had formulated in my own brain, but, when I looked at these index fits, I sort of had similar concerns, and so I have control, and so I can pull up the -- Somewhere, I have just the -- This is the report, and so this is the fit. This is the fit from SEDAR 55, and the red dots is the observed, and the black is what the assessment model did with it, and so, yes, it didn't totally believe the observed index, and so you're right, and so now we're, you know, computing these adjustments based on the red dots, not knowing what the black dots would be, if we were to do an assessment.

DR. NESSLAGE: Can you scroll down to -- I think it's 49, the sensitivity ones, just so that the rest of the SSC knows what I'm looking at?

DR. KLIBANSKY: Let me pull that up, and so that's a different report. That's the SEDAR 55 report. This was my report, and I didn't have that many figures. I will have it in just a second. I have all the reports. Okay, and so do you know what page it was?

DR. NESSLAGE: PDF page 156, if I'm reading the report correctly.

DR. KLIBANSKY: Okay. Let's see. Just to note, and this is something that I had nothing to do with, and this was before my time, and that's totally fine, and I'm happy to look at it, but I can't really comment too much on it, other than this was what was done, and so this is Figure 49, and this is what you're looking at?

DR. NESSLAGE: Exactly. Thanks.

DR. KLIBANSKY: So this is a sensitivity, and I don't know if you can see the text, and I can zoom-in if you like, but I will just read the caption, and it's a sensitivity upweighting the SERFS trap video index, and so the base value is the black line, and the top panel is F over FMSY, and the bottom is the stock status, SSB over SSB MSY, and, actually, I'm not sure if that's the status, and it was probably based on MSST, but, at any rate, the ratio of SSB to SSB MSY.

I think where Genny was going with this is you can see, as you upweight the index, and so the highest upweighted value would be this dashed-blue line, and, as you upweight the index, and so the fit -- I can show our fit better, and it was showing the F over FMSY value higher, and the SSB over SSB MSY value lower, and so, if you really trusted that index more, then you thought the stock status was worse, and your -- You know, the fisheries status was worse. Did you want to say more about that, Genny?

DR. BUCKEL: Genny is shaking her head no, and I have Fred Scharf to that point, and then we'll go to Erik Williams next.

DR. KLIBANSKY: I forgot that there were real people like in a room together, and I'm just sort of a like a voice in the cloud somewhere of wherever you are.

DR. SCHARF: Hi, Nikolai. I think Genny -- It's sort of our last action item, and I think that what she just asked is sort of going to end up getting there, which is what criteria should be met to apply the interim analysis to change catch levels, and, you know, I'm just thinking about like how -- If our interim analysis is going to be an index-only-based analysis, right, and it's, obviously, going to depend on how confident we are in the index.

I know that, when we talked about it last year, in October, we talked about other data streams, in terms of other indicators of the status of the stock, things like age structure or size structure or other things that could be looked at, and I think those are things that I think we'll have to think about, in terms of making a decision about whether or not this can be applied or not.

I had a broad question for you and Erik, for your team in general, in terms of just how you would value these interim assessments. You know, in your presentation, at the end, you were kind of looking at projection performance a little bit, you know, using the interim analysis to kind of say, yes, this seems like the projections have been performing kind of well, and do you -- Would you value the interim assessment more in terms of evaluating the projections or eliminating the need for projections altogether?

DR. KLIBANSKY: Definitely not -- I definitely wouldn't say eliminating the need for projections, and, really, you know, I just want to emphasize that this comparison of projected index and observed index is really outside of what the interim adjustment approach entails. You know, this is something we added, because we were curious, and we thought it would be helpful for you all, because, you know, management is doing something about this stock already, and now we're trying to think of what might -- You know, what might happen next.

You know, I didn't know what this would look like, when we plotted these together, and I was actually -- I would say I was pretty impressed with the comparison. You know, I mean, you're not going to get -- You're not going to predict these exact ups-and-downs, I don't expect, but the fact that it's pretty well right through the middle of that, and it kind of made me think -- You know, for me, some of the concerns that I had about the misfit of the -- Or whatever you want to call it, the poor fit, of the index in the assessment made me think, well, okay, but, where the rubber meets the road, it looks like this is kind of what the catch has been, and it's pretty similar to what the projected removals were for SEDAR 55 P* 40, and the index looks like it's -- It may be within these confidence bands, or maybe it's going up more, or maybe it's going down more, but I thought that -- You know, despite this poor fit in the assessment period, that it was actually pretty good.

In terms of like what to do with these computations, these adjustments, in the simulation that we did, as I indicated, they were basically just immediately implemented perfectly. You know, that's how we simulated it, and that's what Huynh et al. had done.

We've had a lot of discussion about, you know, maybe one thing that you can do with them is actually just use them as kind of a score, like just to get a sense of -- You know, as sort of an extension of what the South Carolina DNR folks are already doing in putting out that trends report, and I don't know about others on the call, or in the, you know, webinar meeting or whatever, but, when that comes out, I always immediately look and start flipping through those trends, to kind of see what it looks like, what, you know, those indices are indicating the stock is doing. One possibility is to kind of use those to just gauge where the stock is, and, you know, not really to like replace stock assessments, or to replace, you know, projections, but kind of just a, you know, a check on the health of the stock.

DR. SERCHUK: Can I ask a question, Chair?

DR. BUCKEL: I have Erik Williams and then Marcel and then you, Fred.

DR. SERCHUK: Okay. Thank you.

DR. WILLIAMS: Thanks, Jeff, and so I won't say too much more, because I think actually Fred and Nikolai just sort of -- With their exchange, they sort of addressed it. That is, you know, put this in the context of what we're trying to do here, which is just to offer another analysis in the portfolio of all possible analyses that could be used to adjust management, and I think there is a tradeoff between simplicity and timeliness, right, and so we can get really simple, and get you rapid advice, but it's going to have a lot of assumptions behind it, or you can go with a full-blown assessment, which takes all that time, but is more thorough, and so there's clearly that tradeoff.

I think, really, all we're asking the SSC, at this point, is to consider, you know, what would you do with this analysis, and could you use this in your portfolio, and would you make adjustments,

you know, and this example may not actually be a good one, in the sense that it looks like everything is okay. I mean, imagine a case where we get one with a plunging index, and it's telling you that you've got to cut the catch by 50 percent, and, you know, how palatable is that going to be? Is that actually going to result in a management action?

Again, put -- As Nikolai was just alluding to, we should put this in the context of just sort of data that comes before the SSC, and maybe consider this a health check, as one of many things, and I really do -- You know, I think I've mentioned this before, but one of the things we're trying to do, as this very plot that Nikolai has up, is try to incorporate our assessment projections into those annual reports, so that you can actually get this visual of, hey, here's what the assessment said the index was going to do, and here's how it actually performed, and, you know, that's a good health check, of sorts, and then, you know, the decision is, well, what do you do with those health checks?

Do you use that to modify the SEDAR schedule, or do you use it to do something else, or do you actually use it to make an actual adjustment to your ABC recommendations, and those are all good questions up for discussion and debate, and so just, again, to reiterate that what we're really trying to do here is just show you guys another tool in the arsenal of science advice that could help in making ABC adjustments.

DR. BUCKEL: Thanks, Erik. Marcel.

DR. REICHERT: I have two comments, or suggestions, and we have, in the past, struggled with how to present the trends, and we normalize to provide some comparison between species, but it does mean that the, and correct me if I'm wrong, but that the scale under the average is different than the scale above the average, and so, for visual purposes, it may be useful to just use -- To not normalize the data and just use the raw data. That gives probably a more realistic idea of ups and downs, especially like with vermilion snapper, where the blue dots are right around the average, and so it makes a difference whether it's just above or just under the average, and this is just for visual purposes, because, earlier, you were mentioning the blue line is kind of in between the red dots, but that may be a little bit different, visually, if you're not using the normalized data. That's one.

The other one is have you guys considered -- I know the video data, because it's a lot more involved to obtain the video data, and they're not as readily available as the trap data, and have you guys considered looking at the video data that are available, and compute something similar, to compare that with what you're presenting here? Thank you.

DR. KLIBANSKY: Yes, we've definitely thought about it, and I -- You know, kind of in the months leading up to this, I was -- I know I emailed Wally, Wally Bubley, about this index, and I started trying to figure out if we should try to get, you know, the video index, and do the standardization, and just sort of there's different things that kind of come into play when thinking about that.

I think part of the question is like how much personnel resources do we want to commit to generating an index for this type of adjustment, you know, and do we want to be looking at other things as well, and so, anyway, we thought about it, and we just decided to use what was most readily available, partly because it seems like the -- Just that the trends report is already out there, and you could just grab those values, but certainly, in the future, and, you know, I don't make any

decisions about how resources are allocated, because someone would have to develop those indices for the video index.

There is also, of course, you know, different timing for when the video data are available, and that was another thing that we had thought about, and talked about, even last year, when we were doing the simulation about when does the video data become available, versus when does the trap data become available, and so, actually, I think, at the time that I was starting this, the video data was not complete for -- You know, it wouldn't have been available for 2022, the 2022 point.

DR. REICHERT: Thank you for that, and I completely understand the tradeoff and caveats, but thank you.

DR. KLIBANSKY: Sure, and it's a good question.

DR. BUCKEL: Fred Serchuk.

DR. SERCHUK: Thank you, Chair, and thank you, Nikolai, for your presentation. It was well done. I have a couple of comments. The first comment is on the first paragraph here, the "although the current SERFS trap index doesn't match the model predicted values from SEDAR 55", and I am concerned, one, why they don't, and I'm also concerned that the -- It's been five years since SEDAR 55, which was a standard update, and it's been over twenty years since we've had a benchmark for this stock, and I'm just wondering, and are there plans to have a benchmark for this stock, given the fact that the model structure was such that the projection from that model, from the standard assessment. didn't predict very well, and, again, I think it's probably -- You know, I think it's useful to think how long it's been since we've had a benchmark, relative to scheduling another benchmark, and so I'm just wondering your thoughts on the timing of the next assessment. Thank you.

DR. KLIBANSKY: First, I guess I will just emphasize that I believe -- So Kyle Shertzer sent me a chat that actually -- I guess this first SEDAR 17 was a benchmark. When I went through the report, it somehow looked to me like it was an update, and so it looks like the most recent benchmark was actually in 2008, and, you know, someone else can send me another chat if that's wrong, but I think that's right.

At any rate, either way, 2003 or 2008, it's 2023, and, yes, it's been a while since there's been a benchmark. Kind of looking through the model in this process, it looked, to me, like there's things that we probably would change if we were doing a benchmark now, and I'm not really sure how much changed in the standard assessment, which, again, the standard was -- Okay. Kyle sent me a chat saying SEDAR 55 updated to modern methodology, and so maybe, you know, the SEDAR 55 standard assessment was more benchmarky than updatey, if those are adjectives, and so I guess I, personally, can't really comment that much on what the need is for another benchmark, and I'm not sure if Erik or Kyle have thoughts on that.

DR. BUCKEL: Chip, did you --

DR. COLLIER: I had one suggestion, when comparing the landings for the historical time period, and you should be pulling the landings from the stock assessment, and then also be using the monitoring files, in order to pull what's being compared, and I think that's going to be the most

appropriate way to do it, because there can be some issues with -- Like you have there that you're missing some of the early time series, but, also, late in the time series, for this fishery, the commercial fishery really hasn't been achieving its ACL for the past three years, and the recreational fishery did get over its ACL one year, but, for the most part, it was under 70 percent of the ACL, and so it is a little bit concerning that they're not getting to their ACLs, but there was also management actions that went in place for the commercial fishery, based on trip limits, to constrain the harvest, and so there are some concerns.

Then the other part is I think we can maybe consider this type of interim analysis in the SAFE report, bring it to you guys every two years, for all the stocks that we would have an index of abundance, and really highlight the ones that are maybe outside of the -- If you go back to the previous slide from that, Nikolai, the one that's outside of the 95 percent confidence bounds, to really highlight those, and particularly emphasize the ones that maybe are low, because that could be indicating that there's a real serious problem for the stock, and so, if there's ways like that on how you would like to see this, and I think there's different ways to present it, and maybe -- I don't know if we need to do it every year, but maybe every two years, and that's our plan for the SAFE reports for the snapper grouper fishery.

I don't know if Nikolai would be willing to do it every two years, or somebody at the team would be willing to do it every two years, and we could definitely get something like this put into the SAFE report and necessarily highlight everything that you guys -- Going through fifty-five species is a lot, and we would definitely want to highlight a few species that we think are of concern.

DR. KLIBANSKY: Thanks for that feedback, Chip, and I definitely appreciate that, and, I mean, these comparisons with the projections are admittedly imperfect, and so, you know, I think, going forward, if we do this kind of thing with some regularity, it will definitely be helpful to, you know, talk to you all about, you know, what forms of landings to use and what sort of the best -- You know, the best data to get to put into this, and so it definitely can be improved, and we would definitely be willing to do that, and I'm certainly willing to do this with some regularity, and it's just depending on, you know, the bigger picture of assessments, and assessment assignments and so, on the schedule.

I guess I would also just point out that I would really highlight the value of the trends report that South Carolina DNR puts out, and, in a lot of ways, I feel like I did a tiny thing, by calculating these little alpha values, the A values, for this species, and, if you look at that trends report, you can see some species that have some concerning trends, in the most recent years, that, without computing that adjustment, you know, they raise eyebrows, and so, you know, one thought we had was we could use these calculations, or something, in that report. I mean, we don't put those reports out, but maybe that's something that could just be cranked out there, and we just basically would provide, I guess, these sigma values, or some proxy, and, you know, the terminal year of the previous assessment, and that's really mostly what comes from our shop.

DR. BUCKEL: Thanks, Nikolai. Yes, I think that would be helpful, along with some of the other items that Chip has in the SAFE report, and that would certainly be informative, especially what Chip just mentioned, that the ACLs haven't been met for commercial, and only met in one year for the rec in the last three years, and so any other questions on the presentation?

Nikolai, I have one question, before we move to the agenda items, and that's -- So this is -- You've got the red symbols here are the chevron trap, and I understood that that's what you have to use, because those are the data that give you the -- You're able to get the 2022 data point in there for this analysis, but then, you know, what's being -- The fit is to the trap video data, and that's from the assessment, and so I wonder, just moving forward with this approach, if, in the assessments, the assessment can be fit to both, right, and we want the trap video, and that's used, but is there a way to get a fit to the trap only that then could be used in this analysis, right, because then that seems like it's more apples-to-apples, to me, but I may be missing something, and so I'm just curious of your thoughts on that.

DR. KLIBANSKY: Thanks for that, Jeff. I mean, I think, without, you know, like rerunning the assessment model, we couldn't exactly get that fit to just -- You know, we couldn't exactly get just the trap fit from SEDAR 55, but I believe that, when those -- When the trap video index was made for SEDAR 55, I believe that the trends in, you know, the trap index, and the video index separately, were pretty similar, and actually what sort of mostly changed, when you go to the trap video index, is that the CV increased around the trend, you know, which, of course, influences how much it's fit and so on, but, anyway, the main answer to your question is I think, without rerunning the model, with kind of a modified index, we couldn't really get a separate fit to just that trap index, but I don't think the trend was much different, and it was just sort of the way the index was fit, based on the CV, would be somewhat different.

I guess I also -- I also just would point out that, in where we're using that, and I guess we use that to generate the standard deviation, and then, in the projections, to kind of compare the current index, and, so far, I've kind of looked at -- This comparison is to be kind of rough, and so, in this particular instance, I'm not that concerned that it's comparing trap video to trap, and then, of course, with that computation to the standard deviation, that's also something that can be a little squishy, because you can decide to have a multiplier on that standard deviation, to buffer that value, you know, and kind of increase its influence, or decrease its influence, on the adjustments, or, if you do something post-adjustment, where you say, okay, well, we're not going to do anything with management unless the adjustment is greater than 10 percent up or down, or something like that, and I'm just throwing out numbers, and I'm not suggesting -- I'm not making real suggestions, but so yes. I think I've sort of gone around a couple of times with your answer though.

DR. BUCKEL: Thanks, Nikolai. That answers my question, and maybe, you know, showing the observed trap video, even though it's not going to go as long as the trap by itself, just to show that overlap, but that they were consistent, and that would be helpful. Okay. I don't see any other hands. Have we got hands online? Fred Serchuk.

DR. SERCHUK: Just a question, as a follow-up to my original one. Is there, on the schedule, a time in the future when we'll have another assessment of this stock?

DR. KLIBANSKY: I don't believe there is, but, when I see the SEDAR schedule, I honestly mostly pay attention to what I'm assigned to.

DR. SERCHUK: I understand that, but does anyone know?

DR. BUCKEL: Chip is coming to the table.

DR. COLLIER: Right now, we do not have -- I don't believe that we have vermilion snapper on the schedule. This one was originally scheduled as an update assessment, and it was changed to an interim analysis, due to workload concerns, and so we haven't put it back on the schedule, because we were a little bit -- We didn't know what was going to happen with this interim analysis, exactly what we were going to get, the level of detail, and so we're definitely going to work to put vermilion snapper back on there, and I need to check exactly where it is. Give me just a minute on that.

DR. SERCHUK: Thank you.

DR. KLIBANSKY: This is just what's on the SEDAR website regarding this assessment.

DR. BUCKEL: All right. Chip, are you looking into something for us? Okay. While Chip is doing that, if we could pull up the agenda items, the action items, for Agenda Item Number 6, and we can tackle those and get as far as we can before lunch. Judd has already added some text for us. Thank you, Judd. The first action item is discuss the modeling approach and data inputs for the vermilion snapper interim analysis. Genny.

DR. NESSLAGE: I still remain concerned, for this particular species, that we would be basing our recommendations on an index-based approach for an assessment that doesn't use the index to inform the estimates, and subsequent management advice, really, and so I'm fine with -- I like the overall approach, but, for this particular species, I don't know how useful it is.

DR. BUCKEL: Chip.

DR. COLLIER: A 2028 operational assessment is when vermilion snapper was put on the schedule.

DR. BUCKEL: Thank you, Chip. Go ahead, Genny.

DR. NESSLAGE: Just to follow-up on my previous comment, and I think it's great, from the perspective of like a SAFE report use, or a health check, but changing an ABC for this species, based on all of the concerns that I've just mentioned, I'm not sure we're making an internally-consistent decision with the assessment, even though it doesn't look like it would make much of a difference, but, as Erik pointed out, if it had made a big difference, we would be screaming right now, I think.

DR. BUCKEL: Fred Scharf.

DR. SCHARF: So I'm kind of asking this to Chip, I guess, just to clarify what we're -- In the action items, kind of what we're being asked, and are we being asked specifically to answer questions about whether we want to apply this particular interim analysis to vermilion snapper right now, or are we being asked to view this as an example of the kinds of interim analysis that we can use? I kind of assumed the latter, and I didn't assume that we were saying we were going to use it right now to make ABC adjustments, but can you clarify?

DR. COLLIER: I think it's a bit of both. You know, this was originally scheduled as an operational assessment, and it replaced that assessment, and so it could be used as both.

Unfortunately, we didn't -- Nikolai did give us that presentation on how these interim analyses could be done, and so that did provide that simulation framework, where they were working, but he did note that they made some assumptions in there that might not match what's going on with management.

DR. BUCKEL: Marcel.

DR. REICHERT: I apologize if I missed this, but, Genny, can you clarify that last bullet point that we added up there, that basing recommendations on an index-based approach that does not use the index to inform estimates of --

DR. LORENZEN: I think she means when the stock assessment did not use the index.

DR. REICHERT: Well, the stock assessment did use the index.

DR. LORENZEN: It did, but it wasn't informative, and I guess that's the --

DR. BUCKEL: Go ahead, Genny.

DR. NESSLAGE: It's in there, but you're not fitting it, and so it's not really -- It's being ignored, and so it's not informing the estimates generated by the stock assessment model, which is I think what Kai was --

DR. LORENZEN: So maybe reword that.

DR. REICHERT: No, and I completely agree, but the way it read was like it wasn't used at all, and so it's wordsmithing, and so that's why -- Okay. Thank you.

DR. BUCKEL: We can cite the figure, Number 49, in the SEDAR 55 report. Go ahead, Genny.

DR. NESSLAGE: So the Figure 49 brings up a second, deeper concern I have, is that, if the index is correct, there's greater uncertainty in stock status than we think there actually is if we trust all the other data sources going into the assessment, and so that's another -- I would make that another bullet point, given we're being asked about the appropriateness of using this to change ABCs, for vermilion in particular, and there -- How to phrase that? The Figure 49 is different, and that's what I'm saying, Judd, is a different bullet. Thanks, because that Figure 49 in the stock assessment report -- The sensitivities conducted during the last assessment indicate that, if the index is tracking abundance, the -- There is greater uncertainty in stock status than the broader overall base assessment model would indicate, and, therefore -- I don't know if everyone else agrees with me, but I would have concerns with using the interim analysis to make real solid management advice, quantitative management advice.

DR. BUCKEL: Alexei.

DR. SHAROV: I understand, and agree, with Genny's concerns, but, by the same token, looking at Figure 49, obviously, the scale is different, but presumably the trends are the same, and so, you know, regardless whether you upweight the relative index in the assessment, to give it more weight

in fitting the model, and so, in other words, we -- I think that there is a relatively good reason to believe that, overall, it tracks the trends in abundance, right, or biomass.

DR. LORENZEN: Well, not according to the model, right? I think this is still word salad that we have there. I am wondering if we can -- I mean, the key point, I think, that Genny is making, and that I agree with, is that, since -- You know, in the assessment, the assessment did not fit the index well, and so then we should not be using the index to update the assessment advice. I think -- You know, everything else I think is maybe more complicated than needed.

DR. BUCKEL: Genny, there's the Figure 12, right, and there's just the fit, and, to Kai's point there, that "therefore, should not be using the index to update, using the interim analysis approach", and that would apply to that Figure 12, and then the question is do we want to describe Figure 49, and I think we need a little bit more there, that, if you do fit the index well, then you end up with the stock status being worse, and do we need to get into that here, I guess is the question, or just say, to Kai's point, that it's just not -- The model doesn't fit the index well, and so we shouldn't use the index for interim analysis and setting ABC. I am good either way.

DR. NESSLAGE: I guess that's the previous bullet, and I guess what I'm trying to get at, with this whole sensitivity thing, is that we are looking at this particular application of an interim analysis, which, in many cases -- Some individuals, or some stocks, might be perfectly fine, but, if you just look at it, without looking back at the old assessment, you might say, oh, this looks like we're in the right ballpark, and I feel comfortable, but, if you're actually, you know, making management advice based on this -- If you look back at the performance of the model under alternate assumptions about the index, I feel less comfortable about it, because of the uncertainty in stock status that that index implies. I can look at the wording and help you wordsmith by tomorrow, but that's my point.

DR. BUCKEL: Great. Thank you, Genny. Marcel.

DR. REICHERT: I was looking at the benchmark assessment, and there is a comment in there about schooling behavior, and other behavior, of vermilion snapper that may affect trap catches, and so -- I remember that we had some discussions in the past about that, and so that may be worth looking into, as there are some comments, I believe, in the earlier assessment reports about that.

DR. BUCKEL: Thanks, Marcel. Let's see if we can tackle a few more of these agenda items before we break for lunch, and they look -- Some of them are straightforward, and so are recreational catch values in CHTS or FES? Do we need to -- Is that still needed, Chip?

DR. COLLIER: So, when looking at -- When going back to the original stock assessment for this, or SEDAR 55, that was done in CHTS units. Pulling data from the fishery one-stop shop, that provides estimates in FES units, and the two are not comparable, necessarily, and so that's a concern, when the landings were used in the comparison in the graph, and so we wanted to make sure that those were in FES units, and it wasn't very clearly written in the report, and so we feel that needs to be specified, especially for all these stocks where it's -- Unfortunately, in the South Atlantic region, we're not always consistent whether or not we're in CHTS units or FES units, and, unfortunately, some are still in MRFSS units.

DR. BUCKEL: Nikolai, can you answer Chip's question on that, please?

DR. KLIBANSKY: Yes, and sorry, but can you restate it? I'm doing a couple of things at once.

DR. BUCKEL: The SEDAR 55 was done using the CHTS-MRIP, and then Chip wants to know -- The landings data that are presented in the report, are those CHTS or FES, the recreational catch?

DR. KLIBANSKY: The recreational catch in the report that I produced for this adjustment?

DR. BUCKEL: Yes.

DR. KLIBANSKY: That is from the fisheries one-stop shop, and, you know, I just downloaded it from that, you know, the tool that they have on there, and I'm not totally sure, and I guess I assumed that it was the most updated approaches.

DR. BUCKEL: All right. Thanks, Nikolai. We can look into -- Hopefully someone -- Does anyone here know if the one-stop shop -- Erik, I see your hand is raised. Please go ahead.

DR. WILLIAMS: I was actually just chatting with Dave, and I guess we need to figure out what is the best source of interim removals that best matches what we do in the assessment, short of actually calling for a full data provision that we do say in the SEDAR assessment, and whether that is the monitoring files or not, and I don't know, and that's what we would have to look into, but I think that's the crux of what we're trying to get at, is what is the best source of interim information, and I don't know the answer to that yet.

While I have the mic, I did want to bring up another issue, and that is the -- One of the assumptions in this method is that the management is performing perfectly, essentially, in the simulation analysis, and that is that the catches are hitting the ABC. If that's not the case, then you wouldn't want to -- The adjustment factor, and, in other words, how do we use the adjustment factor, and, if ABCs are being met perfectly, then you can use the adjustment factor to adjust ABC, but, if there's underages or overages, then you wouldn't want to use that adjustment factor for the ABC, and you want to use that adjustment factor for the actual observed catches, the realized catches, and so just a slight distinction to be aware of.

DR. BUCKEL: Yes, and an important one. Thanks, Erik. It sounds like we are not hitting the ABC, and so good to know. Nikolai, the next one is, I think, another clarifying one for you. Are the index values from the SERFS trends report, or are they recalculated using the SEDAR 55 assessment approach?

DR. KLIBANSKY: As I tried to emphasize in the presentation today, the short answer would be from the trends report, and so the recent average is from the trends report, and the reference value is from the trends report. What we got from the assessment model was the observed and predicted values for computing the standard deviation that was used in that calculation, and so I see that there's some typing that's going on, and I will watch that and see. I'm not sure how to say it without getting into the technical details, but the most important values in the calculation, the index values in the calculation, are from the trends report, period. Both the I recent and the I reference are from the trends report. The observed and predicted values of the index are from the assessment model from SEDAR 55.

DR. BUCKEL: Thank you, Nikolai.

DR. KLIBANSKY: Sure.

DR. BUCKEL: Wally.

DR. BUBLEY: I mean, as we've discussed already, obviously, in the assessment, it was the combination with the video and the trap. I will say though, with the trap portion of both of those, the trends report and that one line up, and so the same methodology was used, the same data, up until that point, and, obviously, the most recent one just has extra years of data, and so I will just put that on the record, to compare the two of those.

DR. BUCKEL: Is everybody happy with the response to that bullet? Okay. The next bullet is discuss if the interim approach should be used to develop ABC adjustments, up and down, or serve as a health check on current status, and it sounds like the -- What I've heard, from folks in the room, is that, given the issues that have been described above, that the interim approach for vermilion snapper would not be used to adjust the ABC, up or down, or, because we're not meeting the ABC, as Erik mentioned, adjusting the current catch, up or down, but folks were in favor of using it to serve as a health check on current status, and is that -- So I think maybe just adding some language there, Judd, about the not -- Marcel, did you have your hand up? Alexei.

DR. SHAROV: I am concerned here. Even if the index was, in general, tracking the stock abundance, I am concerned with this approach, and it is essentially focused on the adjustment on the catch, on our ABC, but it doesn't take into consideration, explicitly, the status of the stock. We're looking at the change relative to the three most recent years, and those three most recent years were not covered by the assessment, right, and so we're taking the three-year average for the index, and we don't even relate this average to the full time series average or, better yet, to the range, or the average, of the index, which corresponds to years where the stock was close to say an SSB threshold, or SSB target.

If we are to agree to use the index to characterize the state of the stock, and then make an adjustment to the ABC, then, yes, maybe it's a straightforward approach, but I don't know whether it's justified or not, and that's a second point, but we would have to look at the index reference points, where it corresponds to the state of the stock at the either threshold or the target, so that we could say that the stock is at or above the SSB target or at or below the SSB threshold, but the recent three-year average reference index doesn't say anything about the status of the stock, except for that, in the most recent year, if it's higher than -- Well, it is possible, just possible, that the stock is above the three-year average, or the most recent average, and so we have no information. We're not providing any information of where it actually stands. Then back to Genny's comment, that, back in 2015, we were actually very close to being overfished, right? No? This is the plot of SSB.

DR. NESSLAGE: That plot -- Actually, if I understand, MSST is 75 percent of SSB MSY, and so the plots in Figure 49 are actually SSB MSY, and so we weren't that close.

DR. SHAROV: So it was a target?

DR. NESSLAGE: But that was only the sensitivities that I was worried about.

DR. SHAROV: Okay. Well, anyways, that's what concerns me, that, currently, it's presented as a catch adjustment tool, but we have no direct connection to the status of the stock.

DR. BUCKEL: Thanks, Alexei, and Judd has typed up some language there, and so if you could take a look and let him know if that captures your thought, and then Genny and then Kai.

DR. NESSLAGE: Alexei just gave me an idea, but these are both about the next bullet, and will you entertain those, or are we going bullet-by-bullet, Chair?

DR. BUCKEL: Help yourself. Pick a bullet.

DR. NESSLAGE: Under the what criteria should be met to apply, I guess what I -- I had two things, and one was I would love to put in here, if you all agree, a direct quote from our report section when we had the report from Nikolai previously about the performance of the interim analysis, and we said the availability of a reliable abundance index is critical for the application of the IA process.

Personally, I am very supportive of further developing this, and this could be a really useful tool for some stocks, but not ones that don't have a reliable index of abundance, and so I would encourage the Center to keep moving on this, but maybe not for a stock like this, and then the idea that Alexei gave me is that maybe we want to put some bounds as well on -- Or give some guidance on what sort of stocks would be good candidates, in the sense that, if the last assessment had X percent, roughly, of the MCBE runs saying that you're well clear of your management thresholds, regarding stock status, then that would be a stock that you might feel comfortable applying an IA to, whereas ones where there is a big, fat banana on the -- Do you know what I'm talking about? The banana shapes, the Kobe plots, basically, right, and you would want to avoid those stocks, and so maybe give the Center some guidance on which ones we would feel comfortable using this for in the future, if that's helpful. Thanks.

DR. BUCKEL: I like that, Genny, and, to that point, I just want to clarify that is using the interim analysis approach to adjust catch, or would that even be for looking at just a check-in on the status?

DR. NESSLAGE: I think we wouldn't want to go anywhere near adjusting catch, if we're uncertain about stock status, personally, but --

DR. BUCKEL: Thanks. I had Kai next, and then Nikolai online, and then Marcel.

DR. LORENZEN: I mean, given that we said -- Because, essentially, we don't have a reliable index of abundance, and I don't think we should say, yes, but this can be used as a health check, because just basically said that, no, we don't think so, and so we shouldn't go back and say, yes, but please use it as a health check.

DR. BUCKEL: Go ahead, Genny.

DR. NESSLAGE: Sorry, and so the one area where I think it might be useful is, if we're going with longer time periods between when we get assessments, which is fine for some species, in my opinion, but, if I saw an index tanking, and even if it's not super previously informative, but, all

of a sudden, there's this warning signal, that might trigger closer investigation, and that might be interesting, and informative, but, otherwise, yes, I agree.

DR. LORENZEN: So your comment was not specific to this analysis, but it's a general comment, because I was thinking, after saying that we don't have a reliable abundance of index, and we didn't want to use it, then we cannot say that, actually, we want to use this as a health check, but, no, that makes sense, and, I mean, it's more general, and, actually, because, you know, in the Gulf, we've had these for a while, these interim analyses, and so the SSC there okayed the methodology, and then I think they were done quite routinely for several stocks, and then it turned out that -- Really, the idea was, and I think is here, that it's not to replace assessments, and it's really just to allow us to make some adjustments in periods between assessments.

Then I think the council decided that they wanted to be able to pick and choose whether they would implement what comes out of these analyses, and so then they became this sort of let's just do it as a health check, but it's a very expensive health check, or certainly it was the in the Gulf, in the sense that you have to do all the data preparations and everything, and it's not a full assessment, but a lot of the pre-work is quite similar, and so then, at some state, you get to the point of, well, is it worth going through all of this, but, here, I mean -- Well, I mean, your program is producing this index anyway, right, and so that information is made available on an annual basis, and so we can just look at that and then decide is this worth doing a formal interim analysis.

DR. BUBLEY: Correct, and not knowing exactly what sort of interim analyses they're doing in the Gulf -- Obviously, if there is more involved, if you're looking at age or length composition or something like that, yes, it's a bigger lift, but, as you mentioned, we are producing that on an annual basis, and so it's readily available, and, based on what Nikolai was doing here, it's not as much of a heavy lift.

DR. LORENZEN: No, and I think the answer to that question is so what we did was to choose an index, and there are more indices generally in the Gulf, and so there's the bottom longline, and then there's various video indices, and there's, you know, fishery-dependent indices, and they would choose one index that, you know, is believed to track the stock well and use that in the interim analysis, but, often, to produce that index would be considerable effort for the Science Center, which, in this case, is not as bad.

DR. BUCKEL: I've got Nikolai, Marcel, and then Amy.

DR. KLIBANSKY: I just had a real down-in-the-weeds comment about a bullet before, where it referred to "error ratios", and I just -- I know this is not my write-up, but I don't know that I would know what "error ratios" were, based on -- Maybe it should just say, this one at the bottom, observed and predicted values for calculating error ratios, and maybe it should just standard deviation, or index error. I know that's down in the weeds, but we like down in the weeds, right?

DR. BUCKEL: Thank you. I appreciate that. We need to be as clear as possible, so, when we read this a year from now, we'll know what we were talking about. Marcel, go ahead.

DR. REICHERT: The middle bullet point, I would still add the comment that Genny made that the availability of a reliable index is critical, and, without that availability -- Thank you, because, with your wordsmithing, we kind of lost that. To what Genny said about if you had a species that

we have a reliable index for, but it's not close to being overfished or overfishing, that would be a good candidate, and, unfortunately, I think I can imagine it, for the council in particular, species that are relatively close to that threshold, and those are probably species that are -- For which it's very valuable to get information to see if something could happen, and so I don't necessarily disagree with Genny, but, in terms of value -- Anyway, the other species may be more valuable, and I'm not sure if we should dismiss those species, if we have a reliable index for an interim analysis.

DR. BUCKEL: So this could be a two-parter, right, and it could be to determine metrics for which species would be good candidates for using an interim analysis approach to adjust catch, and that would be, you know, a high percentage of the MCBE runs that show that overfishing is not occurring and not overfished, but you also -- For ones that are uncertain, where there's a higher uncertainty, that could be an interim analysis to check on the health status.

DR. REICHERT: I think we've said, on a variety of occasions, perhaps not to adjust the ABC, but at least to indicate to the council that, hey, you may want to pay attention, and maybe that should be a high-priority species for an update, or a more detailed assessment, update or standard or benchmark or --

DR. BUCKEL: Amy.

DR. SCHUELLER: In the second bullet, to be extremely specific, I think we should say the availability of a reliable index that is fit well in the stock assessment, just to be extremely nitpicky, and then the other -- I was going to bring up another point, and so Nikolai presented a management strategy evaluation for the interim analysis a while ago, and I think there were like eight species in that, and Nikolai can correct me on the details, if I'm wrong on that, but I think there were eight species, some of which performed very well and others that didn't perform as well.

In particular, vermilion snapper was one of the species that didn't perform well, and so, as I'm sitting here thinking, if I was a council member, and I was going to have a criteria for whether or not I wanted to use an interim analysis, I would pick a species that performed well in the management strategy evaluation, had a reliable index of abundance that was fit in the stock assessment, you know, wasn't in danger of having, you know, a change in stock status, with changes in the data, and so those would be my critical things, and I think, you know, we've talked about that management strategy evaluation in the past, but I think we should note it again here, just so that we keep remembering that that was presented to us and that some species performed well, while others did not.

DR. BUCKEL: Fred Scharf and then Marcel.

DR. SCHARF: So, you know, given -- I have written down a lot of notes, and some of it was carryover from the report from last year, in terms of, you know, just this first question about whether we want to use interim analysis as more of a health check, whether we want to use it to adjust catch levels, or ABC, if we're meeting ABC, and, you know, whether it can be applied broadly to multiple species, whether it's restricted to species that have unique sets of life history traits, whether it's species that are not going to be in danger of stock status changes if we implement a change in catch level, whether we have a reliable index, and how do we define a reliable index, and all of these sorts of questions that are broad, and I think we could learn a lot

from the experiences from the Gulf SSC, and their application of interim analysis, and so I say all of that feeling like it feels to me like we need a working group to move us forward.

I hate to say that, and I don't want to say that, and I'm not volunteering to be on the working group, and I'm just saying it feels like we need a working group, and I wonder if there's any consensus that we could benefit from a working group to really synthesize what we know about these, what kinds of criteria that we want to use, so that we can develop a framework, in terms of how they're applied, and then -- I'm not saying that we need one necessarily, but I just want to see what everyone else thinks.

DR. BUCKEL: Chip.

DR. COLLIER: I was -- While we were talking, I was thinking about the best approach for this, and one of the ideas is for staff to develop a strawman for you guys to review, as opposed to forming a working group on this, and, you know, we don't have another interim analysis on the schedule, and so we have a few years to develop it, and we can just bring a document to you guys, for your review, and just expect that it might take a little while to put it all together, but I think we can get something without necessarily developing a working group for this, and I know we have plenty of working groups now, and putting another one on the schedule I think would be difficult, but I think we could develop something for you guys to review, and take notes of what we heard here, and, you know, maybe look at other places and how they've done interim analysis, and provide all of that information to you.

DR. BUCKEL: Thanks, Chip. Marcel. All right. Well, I've got about 12:25. Does anybody have any more additions here? I think we've hit -- Judd, have we hit on all of these? We have that one bullet of review catch adjustments.

DR. CURTIS: I think just that one bullet explicitly stating the SSC does not feel comfortable using the interim analysis for vermilion snapper to adjust the catch levels.

DR. BUCKEL: Right.

DR. SCHARF: Should we include some text about what Chip just said, so we can hold them to it?

DR. BUCKEL: Okay. We can let everyone -- We'll go ahead and break for lunch, and if everyone could be back -- Alexei, go ahead.

DR. SHAROV: Just one question. So, if the trap index that we were looking at was really low, and the previous three were also really low, what would we have done? Would we have said that it's an unreliable index, and, therefore, we just simply ignore it, or would we have said that we need to do something, and there is an indication that, despite the uncertainty in the index, there is a high probability of the stock being very low? To what extent -- Does it say to us is there any positive information in the trap index that we're seeing currently that we should be using for the catch advice? Lunchtime?

DR. BUCKEL: It is lunchtime, and we'll meet -- Chip, go ahead.

DR. COLLIER: I think that's something that we could do in that working paper, is to develop different scenarios and to basically lay out, all right, what would the guidance -- What would the SSC's guidance be in this situation, and so I think -- I mean, there's pretty clear-cut scenarios, but there's also going to be intricacies, right? If we have something like vermilion snapper, and it's not fitting well, and it's low, and so what do we do there, or what does the SSC do there?

There's also something like black sea bass, where the index fits tremendously well, and then it's low, and what would the SSC do, and so I think we can develop some scenarios for you guys to consider, and maybe, that way, you guys can develop your thought process in forming what could happen based on those different scenarios that we come up with.

DR. BUCKEL: Thanks very much, Chip. We are going to break for lunch now, and we're going to come back to Agenda Item Number 7, the BSIA National Standard 2 Regional Framework, and so, Jack and Erik, we'll be back at 2:00 p.m. for that presentation. Thanks, everyone, for a productive morning.

(Whereupon, a recess was taken.)

DR. BUCKEL: All right, everyone. Welcome back to the South Atlantic Council's SSC meeting. Next up on the agenda is Item Number 7, BSIA National Standard 2 Regional Framework, and there are two documents, Attachment 7a and Attachment 7b, and Jack McGovern is going to give a presentation. There's no PowerPoint presentation, and Judd is going to scroll through the framework document. Judd, if you could pull that up, and then, Jack, are you seeing the document?

DR. MCGOVERN: I see it, Jeff.

DR. BUCKEL: All right, Jack. Take it away. Thank you.

BSIA NATIONAL STANDARD 2 REGIONAL FRAMEWORK

DR. MCGOVERN: Okay. Well, thank you, everybody. Sorry I'm not there today. I'm going to go through the Southeast Region framework for BSIA. This is something that's being done in all the regions of the U.S. We have a procedural directive from Headquarters that stated that each region should develop a regional framework to ensure that management decisions are based on BSIA, and so we're doing one for the Southeast, and the intent is that we have one framework for the Gulf, the Caribbean, and the South Atlantic.

This framework that you see here has been developed jointly by the Southeast Fisheries Science Center and the Southeast Regional Office. For the Science Center, Clay Porch has been the lead, and he's had a number of people from the Science Center look at various versions, including Erik Williams, who I know is on this meeting, Shannon Cass-Calay and John Walter, and then, on the SERO side, Andy Strelcheck, our Regional Administrator, has been the lead, and I've also worked on it, with Heather Blough, and then, from General Counsel, Shepherd Grimes, who is in the room with you, and he's been the lead attorney working on this.

We've sent this document out, various versions, to all three -- Staff of all three councils that we work with in the region, the Gulf, the South Atlantic, and the Caribbean. We did get comments,

and that is from the Gulf and the South Atlantic. John Carmichael and Chip reviewed it for the South Atlantic. For the Gulf, Carrie Simmons, the Executive Director, John Froeschke, the deputy, and Ryan Rindone reviewed it for their staff, and then the Caribbean Council didn't have any edits. Then, last month, we presented this framework to the Gulf's SSC, and they didn't have any comments or edits.

The intent of this framework is just to document what's already being done, and it's not to create new work for folks, and, eventually, this regional framework will be posted on the Headquarters' website, with the BSIA frameworks for the other regions, and then, if each council chooses, they can have this framework as an appendix to the regional operating agreements, and so, the way this document is structured, there are two main sections. There is the general precepts that you see here, which consists of four paragraphs, and then the second section is the procedure for BSIA determination, and that has three parts. It has the procedure for stock status determination, the procedure for catch specifications, and then a chronological summary, leading to the final BSIA determination by NOAA Fisheries.

I will just walk through this, and I guess Judd is driving, and he can -- As I go through these different parts, he can comment, and Erik and Shep may want to chime-in on various parts as well, and so I will go to the first paragraph here that you see, and it states that -- It deals with Magnuson, and it states that Section 304 of the Magnuson-Stevens Act requires the Secretary of Commerce to review the plan, or amendment, that is developed by the council to determine if it's consistent with the National Standards, other provisions of the Act, and any other applicable law.

Then it goes on to say that the Magnuson Act requires the Secretary to initiate an evaluation of proposed regulations to determine if they're consistent with the fishery management plan, plan amendment, the Act, and other applicable law, and it says that, because the Secretary has delegated those authorities to NOAA Fisheries, that NOAA Fisheries is ultimately responsible for determining if management measures are based on BSIA and what constitutes BSIA. However, the agency largely fulfills these legal responsibilities based on the administrative record that's developed through the council process and the deliberations of its SSC.

The second paragraph deals with NS 2, National Standard 2, and SSC scientific advice, and the NS 2 Guidelines require that each SSC committee provide its council with ongoing scientific advice for fishery management decisions, including recommendations on ABC, preventing overfishing, MSY, achieving rebuilding targets, reports on stock status, status and health, bycatch, habitat status, et cetera. Then the guidelines further state that SSC scientific advice and recommendations to its council are based on scientific information that the SSC determines to meet the guidelines for best scientific information available.

It states that SSCs may conduct peer reviews, or evaluate peer reviews, to provide clear scientific advice to the council, and such scientific advice should attempt to resolve conflicting scientific information, so that the council will not need to engage in debate on technical merits, because debate and evaluation of scientific information is the role of the SSC.

The third paragraph deals with peer review, and it states that peer review is an essential part of determining whether the scientific information used meets the criteria for BSIA, and the Magnuson Act provides that the Secretary, and each council, may establish a peer review process for that

council for scientific information used to advise the council about conservation and management of the fishery.

The fourth paragraph, and this is the last paragraph of the precepts, deals with timeliness, and it states that mandatory management actions should not be delayed due to limitations in the scientific information or the promise of future data collection or analysis, and that fishery management plans must take into account the best scientific information available at the time of preparation, and the fact that scientific information concerning a fishery is incomplete does not present the preparation and implementation of a fishery management plan. I will stop there, before proceeding, to see if there are any questions.

DR. BUCKEL: Do folks have questions for Jack? I am not seeing any hands in the room. Anything online?

DR. MCGOVERN: All right. Well, we'll go to the next part, which is the procedures for BSIA determinations, and the -- If you scroll down a little bit there, we can see that paragraph, and it states that it is ultimately the responsibility of NOAA Fisheries to make stock status determinations, improve catch limits, and other management measures and certify that those decisions are consistent with BSIA. However, the agency relies on input and advice from the SSCs and the peer review process when it certifies management actions or BSIA.

Item 1 deals with stock assessments and indicates that stock assessments are most often done through the SEDAR process, and it further states that a draft stock assessment, whether it's conducted by SEDAR or some other process, should be peer reviewed, and the peer review should be limited to the data and analysis available when the stock assessment was completed. The final BSIA certification by NOAA Fisheries includes the stock assessment, the amendment developed by the council, and is based on the record that's developed by the council and the SSC, and it also says that the SSC is not required to make any BSIA recommendations for any particular piece of information, but it's helpful for them to advise on that.

Going down to Item a, that has three parts to it, and it states that -- It discusses that a peer review under an assessment should evaluate, to the extent possible, stock status relative to overfishing, which is based on the status determination criteria specified in an FMP, stock status relative to overfished status, and the technical merits of potential revisions to the status determination criteria, such as proxies for MSY, harvest control rules, other management actions, per the terms of reference in the assessment.

Item b states that the peer review may be conducted by the SSC or another process independent of the SSC, such as the Center for Independent Experts, and Item c states that it's not necessary for the SSC to repeat a review, but it should focus on the information that has not already been peer reviewed. Item d, per NS 2, states that, if an SSC disagrees with the findings, or conclusions, of a previous peer review, in whole or part, the SSC must prepare a report outlining the areas of disagreement, and that this report must be made publicly available.

Item 3 states that the Science Center should establish a point of contact to the SSC to support discussions regarding the assessment and that NOAA Fisheries representatives who are members of an SSC will not fulfill this role, and I will stop there, before proceeding, to see if there are any other questions.

DR. BUCKEL: No hands, Jack, and so please proceed.

DR. MCGOVERN: Okay. Item f talks about, if the peer review identifies substantive deficiencies that cannot be addressed immediately, then the required remedial measures will be provided in writing to the lead assessment agency and that adjustments that are limited in scope, which can be addressed by the SSC, or other designated peer review body, should be attempted, when feasible, and then, otherwise, the SSC should decide whether the collection of the information at the time is sufficient for management advice.

Item g talks about, if the SSC determines that the information before it is not BSIA, and the Science Center also makes that determination that it's not BSIA, that the SSC, in coordination with the Science Center, should establish, and document, an alternative basis for management recommendations, until new information, such as a stock assessment, can be obtained. Then it goes on to say that, if the Science Center determines that it is BSIA, and the SSC does not, the SSC should reconsider it as a basis for catch limits or other management recommendations, to avoid the potential need for additional action, and so I will stop there.

DR. BUCKEL: Genny.

DR. NESSLAGE: Hi. Thank you. That last sentence that you were just walking us through there, could you describe the difference between should, shall, will, and must, I guess, and what does that imply regarding our latitude for accepting and using what the Center has determined as BSIA?

DR. MCGOVERN: Well, it doesn't say much, and it says the SSC should reconsider it, and I guess what would happen here is that there would probably be a discussion between the Science Center and the SSC about, you know, what the differences are and that sort of thing, and so I think, in this situation, it might be something like what occurred for Spanish mackerel, most recently, and that's the only example I can think of where something like that might have happened.

DR. BUCKEL: No other hands, Jack.

DR. MCGOVERN: Okay. All right. Item h states that the Science Center makes a determination of that stock status, based on the peer review and recommendations from the council's SSC, and this is usually after an SSC report is provided, and the Science Center then enters the information into the Species Information System, and then -- I talked to the person who does this at the Science Center, and he says that he always waits for the SSC report before he does this, and then, by locking the information into SIS, or the Species Information System, NOAA Fisheries indicates that the assessment provides information that is consistent with the BSIA process.

Then, if there's a change in the stock status, we, at the Southeast Regional Office, will work with the Office of Sustainable Fisheries in Headquarters to draft a decision memo that is cleared through Andy Strelcheck, the Regional Administrator, and then signed by Janet Coit, the Assistant Administrator, and then what we have done is then we send a letter to the council indicating that, you know, there's been this change in status. We have, historically, only done it when the change has been, you know, it's undergoing overfishing, or it's overfished, and that management action is needed, but John Carmichael, when he reviewed this, requested that we send a memo to the council regardless of the change, and so we'll be doing that from now on.

Then assessment results are summarized in a website from the Office of Science and Technology that indicates the status of the stock and the results of the stock assessment, and this is for all the stock assessments in the country, and then stock status is also reflected in the report to Congress, which is on the website, and there are quarterly updates, and they give information on stock status for species. Any questions there?

DR. BUCKEL: No hands, Jack.

DR. MCGOVERN: Okay. The second item here is the procedure for catch specifications, and it states that the SSC is responsible for recommending an OFL and an ABC, based on the information from the assessment and the ABC Control Rule, and that the catch level recommendations are then provided to the council, and they develop the annual catch limits, based on their SSC's recommended catch levels.

Item a deals with overfishing limits and states that it should be risk-neutral, which means it's not adjusted for scientific uncertainty like the ABC is. Item b deals with the ABC and says that it should be reduced from the OFL, based on scientific uncertainty, consistent with the ABC Control Rule, and that the SSC can depart from the ABC Control Rule, but it must provide rationale for doing so. Item c discusses proxies for MSY status determination criteria and that the SSC should advise the council on the proxies that are most likely to produce optimum yield.

Item d states that additional projections may be requested, after a peer review, to compute OFL and ABC, contingent on proposed management changes, and the SSC should work with the lead of the assessment agency to document the projection specifications and discuss their implications for stock rebuilding and catch levels and that the report should be archived on the council's website, and then each of these steps developing scientific information should be documented and traceable. Any questions?

DR. BUCKEL: No hands raised here.

DR. MCGOVERN: Okay. This last part is a chronological summary, and it repeats a lot of the things that have already been mentioned. Item a indicates that the SSC receives scientific information. They consider the information and seek clarification, where necessary, under Item b. Under Item c, the SSC considers if the information is consistent with BSIA, and, if consistent with BSIA, it makes recommendations based on the available information. If the information is not sufficient for overfishing or overfished status determination criteria, or supporting catch levels, they can consider other sources of information, such as peer-reviewed literature and the ABC Control Rules.

Then the next one is for BSIA determination of assessment and stock status. The Science Center reviews the assessment and then records the -- If it's BSIA, it records the stock status in the Species Information System, after the SSC completes their deliberations. If there's a change in stock status, the Southeast Regional Office works with Headquarters to develop a decision memo, cleared through the Regional Administrator and assigned by the Assistant Administrator, and then a letter is sent to the council. Then Item 4, under that, is the report to Congress documents the stock status, and then a request by one of the reviewers is that we -- After this is in the report to Congress, that we communicate that to the council.

Then the final NOAA Fisheries approval, and this is after, you know, the SSC has made their recommendations, and the council has developed an amendment, and it's been submitted to NOAA Fisheries, that the council -- NOAA Fisheries then makes sure that it's consistent with the National Standards, the Magnuson-Stevens Act, including National Standard 2, other provisions of the Magnuson-Stevens Act, other applicable law, and then NOAA Fisheries provides certification that the information is based on BSIA, and the certification is usually in the form of a letter from the Science Center Director, Clay Porch, to the Regional Administrator, Andy Strelcheck.

If the council makes a decision that's inconsistent with the advice of its SSC, such as the choice of the MSY proxy, NOAA Fisheries will determine if the decision is consistent with BSIA, when reviewing the council's recommended action. If the agency determines that the council's recommended action is not consistent with BSIA, then the council may revise the action and submit it for review, and, if the council fails to submit a revised action, the agency may prepare a secretarial plan, which is rarely done, and so that's -- Any questions on that part?

DR. BUCKEL: No hands, Jack.

DR. MCGOVERN: Okay. Well, Jeff, if there are any comments, or edits, on all of this from the SSC, you know, we'll include them in the final version of this document.

DR. BUCKEL: Okay. Thanks, Jack. We'll do a public comment at this point, if any members of the public are online that want to comment on this item, and then we'll move into our discussion and addressing the agenda items. All right. Seeing no hands from the public, we will move into our discussion, and so, Judd, if you could bring up the agenda.

The first action item is review the Southeast regional framework, and so Jack just walked us through that, and hopefully you have read it before Jack's presentation, and then the second bullet is what are the implications for scientific-based management and the peer review process if the SSC's determination of BSIA is overridden by the Center for stock assessments used to set ABCs? It sounds like that's that "should". Genny got right to the sentence where, if the SSC didn't -- If they found that an assessment, or some other ABC-setting tool, was not BSIA, but the Center did feel that it was BSIA, it appears, from that language, that there's still latitude for the SSC to use a different approach to set an ABC, and is that your understanding, Genny, from that, with the "should"? All right. Genny is nodding. Kai, did you have something?

DR. LORENZEN: Yes, and, obviously, this is the 1g, and that is, obviously, the one that I am most concerned about, because it does seem to give NOAA -- How do I word this? Extreme leeway to override concerns of the SSC, on the basis that it takes too much time to deal with it, and I -- You know, we talked about Spanish mackerel, and, obviously, it's one that is fresh in our minds, and the other one, that is not from this region, that immediately comes to my mind was the funny spreadsheet model that NOAA Fisheries designed on the basis of the Great Red Snapper Count to support fairly sizeable increases in catch limits that had very little basis in reality, I think, and that was really the SSC had a major role in holding that back and toning it down to something that was reasonable, and so I'm sort of a little concerned that, you know, we're -- Presumably, I mean, this is in here as a result of those events, but I am very concerned about the implications of that for the integrity of advice.

DR. BUCKEL: Genny.

DR. NESSLAGE: I guess I'm also concerned about the integrity, and I'm looking at Section 3d1, and so it's a big circle, and so NOAA Fisheries reviews the assessment, and they did the peer review, which is external, the SSC recommendations, which are external, and then they review all of that, and so they're reviewing their own work and determining if it's BSIA, ultimately, at the end of the day, and I don't know -- That, in traditional scientific circles, would not be considered external peer review, and I guess I do understand that, at the end of the day, NOAA Fisheries is responsible for managing federal fisheries, and so they do have to make a judgment call, at some point, but I would hope that that nuclear trigger would not be pulled very often, because that would erode the, I think, good reputation and the excellent science that's done by the Center and people's -- I guess people's faith in the Center and their commitment to ensuring the best science is used in management. Thanks.

DR. BUCKEL: Thank you, Genny. Others?

DR. LORENZEN: If I can just -- Then, you know, that is exactly right, and I think, you know, we have these procedures to, you know, provide independent review, and it should help us all to, you know, build greater trust with our stakeholders, and, right now, there is not all that much out there, and I don't think it's a very good idea to further curtail the -- You know, the obvious back-and-forth of the SSC review process and the improvements that come out of there, and I'm not saying -- You know, very often, we don't get to the point where, you know, it comes to a direct clash, and we're usually quite cooperative, and I'm just concerned about the fact that this seems to, you know, put a nuclear option on the table that can be used at some discretion. There was something else that I wanted to say, but I lost it, if you can come back to me.

DR. BUCKEL: Go ahead, Kai.

DR. LORENZEN: This is actually a question for Shep, and, actually, it may be the SSC -- That we should get our own lawyer, but, since the NOAA lawyer is the only one available at the moment, let me ask Shep, and so my understanding is that -- I know, under, I guess it's National Standard 1, but the SSC is responsible for setting the ABC, right, and that includes, you know, passing judgment on the information that goes into that, and so now it's saying, well, but NOAA could come and say, well, you mustn't use the information that you think isn't BSIA, but we have determined that it's BSIA, and now you should use that to set an ABC, and it seems, to me, that doesn't that erode the stipulation that the SSC is responsible for setting the ABC, because it really puts sort of a tight grip around that, potentially?

DR. BUCKEL: Shep, please go ahead.

MR. GRIMES: Thank you. Well, so there are two, I would say, separate requirements in the statute. There is National Standard 2, which is the best available, and that's touched on in this guidance, and it speaks to conservation and management measures must be based on best available scientific information, and so we're always looking at that in some context, right, and then there is another sector of the statute that talks about the functions of the council, right, and the function of the council is they must do annual catch limits that can't exceed the catch level recommendation of their SSC, right, and so I guess, theoretically, there could be a situation where let's say an SSC made a catch level recommendation based on information that was later deemed to be not best

available in secretarial review, and then the end result of that is that the action would be disapproved, because it was not based -- You know, if it's not based on best available scientific information, and the Secretary makes that determination.

I mean, it cannot lawfully be approved, which, if we were in litigation, we would be sunk, but that's the standard with it, and so, you know, I don't think you would be in the situation where you would have the Secretary having to implement something and it was based on -- Even, I would say, if the Secretary determined that it was based on the best available scientific information, but it was in a council management action, and it had an ABC that was higher than the recommendation that came from the SSC, and that's probably not going to be approved either, because you have that, you know, obvious other violation of the terms of the statute, but they are in different places and are different -- I mean, they're related, obviously, but they are kind of different things, in my view.

DR. BUCKEL: Please.

MR. GRIMES: So I was part of the discussion of this with the Gulf SSC, when we presented it, and they had a bunch of questions, and I've worked with them, I think, more overall in the past, or probably maybe not so much now, but I had a couple of things that I think, you know, that are important to keep in mind, just, you know, when thinking about this generally, and the first of those you've already touched on, and it is a hierarchical process, right, and this body is an advisory body to an advisory body to the Secretary of Commerce.

Ultimately, the decision is -- We say the Secretary of Commerce, and all the authority has been delegated down to the Fisheries Service, but there is absolutely always still a connection to the Secretary of Commerce that -- You know, whether they're specifically approving, they're overlooking, but that is how it works, and it is also a record-driven process, right?

I mean, this is touched on in the procedures here, that, you know, conservation and management measures, and it's based on the record developed by the SSC, the council, and the agency, and that record needs to support the final decision, and, coincidentally, that record is also the main thing that a reviewing court is going to be looking at, and it's really the only thing that a reviewing court is going to be looking at in defense of our decision, and so, if we do something, and we have -- You know, let's say we had this, you know, vehement disagreement between the Science Center and an SSC over some catch level, and we come in and implement that, and, if we were to face litigation, we would have -- We wouldn't have a strong record in support of our action, right, and I don't really know how that would ultimately come out.

I think, you know, from a legal standpoint, these are very, very technical issues that judges are generally very reluctant to wade into, and they would defer to the agency on it, and that's the agency, and not necessarily the council or the SSC, but I would also say that the level of deference is kind of eroded, and it seems like courts are more willing to second-guess that stuff, and so who knows how it would turn out, but my main point there is that, you know, it's a record-driven process.

You will always have your change to have input on it and review it and develop the record to support your position and your recommendation. The better job you do in that, the harder it is to second-guess that at the next level, and, to get at the point that Kai was making when he said that

maybe you should have your own lawyer, there is something to that, I think, and, I mean, I've heard that from councils, versus the agency, and, you know, it's there, but, ultimately, we are all working towards the same goal, in terms of the statute, and that is, you know, sustainable yield and doing our thing under the guidelines of Magnuson overall.

I already made this one, and I said that I would reiterate it, but it's important to keep in mind that like, when you look at things, and I remember discussions of information over red snapper that this body was deliberating, a few years ago now, but looking at each little piece that came along and then having a debate about whether that piece of information was the best available scientific information, and I saw you spend a lot of time doing that, and I would strongly discourage you from doing that, and that seems futile, because you're asking a question about some tiny little thing in a vacuum, which is not how it works.

It's always, you know -- For one, best available for what purpose, right, and how are you using it, and, ultimately, that's how the statute views it, I would say, in those conservation and management measures, how things are implemented, but this might be the best available scientific information for reviewing, I don't know, historical landings, or stock status, but it might not be for providing catch level recommendations or projections into the future, and, I mean, that's just hypothetical, and you would have to justify all of that, but I could envision that kind of stuff occurring, but, you know, don't -- The bottom line being, right, that it's about best available for some purpose, and, ultimately, that purpose needs to be in support of whatever final council action, right, and that's where the record is most important, because, once there is council action, that means there are legal ramifications, things that can be challenged, and the record needs to support it.

DR. BUCKEL: Genny.

DR. NESSLAGE: So is -- Our ABCs are set for assessed stocks using the stock assessment information, which, in theory, if the Center is presenting to us, and if it's been through SEDAR, and, you know, without major concern, they would consider it to be -- They're presenting it to us because they think it's BSIA, which is fine, and are we then obliged to use the F estimates, and the uncertainty estimates coming out of that assessment, to set our ABCs, or can we use any information in that assessment to deviate from our typical ABC Control Rule and, if we were to justify it, set the ABC that way, or would it still be then considered BSIA, or are we basically being forced to use the OFL estimate from a stock assessment that the Center considers BSIA, in which case I would say why are we here? We're just rubber-stamping.

MR. GRIMES: Well, I wouldn't say you're forced to use anything. I mean, you make your recommendation, and your recommendation can be at-odds with something that the Southeast Science Center supports, and then the agency has to figure that out, right, and then who has got the stronger case? You know, I have certainly -- You know, I've seen these kinds of behind-the-scenes debate at the last minute, over, you know, should this have been used, or that been used, but, you know, you're not forced to use anything, I wouldn't say.

Based on what you said, I want to say one thing, and so when the Center -- When you get an assessment that has gone through SEDAR, and it's one that's already been -- If you're not doing the peer review, right, and it's been peer reviewed, and there's been no best available determination with it, right, and there would be no best available determination probably until this body, I think, said -- If it were to say, yes, we're going to set a catch limit, and we think this stock assessment

that was presented to us represents the best available, for the purposes of that catch limit, and then -- Because, as far as I know, the agency never makes a best available determination until we have a rule package, and that rule package, or amendment approval, has a National Standard 2 determination that we have to make to support that, because that's when the law requires it. Did I answer -- I know I kind of meandered there.

DR. BUCKEL: Fred Scharf.

DR. SCHARF: So it just -- I read through the National Standard 2, and then it just seems like there's some language in here that doesn't align well with the document for the Southeast Region that Jack just presented to us, specifically, you know, in Section (c) of the National Standards, which is in the SSC briefing book, and it says, very clearly, that the SSC's scientific advice, and recommendations, to its council are based on scientific information that the SSC determines to meet the guidelines for best scientific information available, as described in Paragraph (a), and, if you go to Paragraph (a), it doesn't say anything about NOAA determining BSIA, and it just talks about all the different types of scientific information that can be used, and, you know, information about relevance and inclusiveness and objectivity and transparency, and so it seems like there's a disconnect. I mean, it's pretty -- That statement is pretty clear, in the National Standards, that says the SSC determines what the guidelines are for BSIA when it's making advice to the council.

MR. GRIMES: So I think that exact -- Actually, I am certain that exact text that you read is in the BSIA guidelines that we went over, right, and I remember going over this specifically with the Science Center in developing this, and, really, what the guidelines, that language you're talking about, references back -- It says that you're not actually making a best available determination, and it says you have to make a recommendation that it's consistent with the stuff that it references, but what it references, the guidelines, they're procedural, right, and it's follow this process, and there is, you know, objectivity and integrity and those kinds of considerations. I will grab my computer, so I have it.

DR. BUCKEL: John Carmichael.

MR. CARMICHAEL: On that, Fred, the way I sort of read that is, because it is a hierarchical process, and it goes from the assessment to you guys to the agency making the determination, I think it says you're within your right to make your recommendations on what you think is BSIA, and you may use everything out of the assessment, or parts of it, and I think, to Genny's point, I don't think, if you get an assessment that say you think is BSIA, it doesn't mean, in my mind, that you think that every output from that assessment is equally valid.

You may look at it and say we think this assessment gives a good estimate of it's BSIA, and it gives us a good estimate of fishing mortality, but we don't have confidence in abundance estimates, and I think SSCs have done that, and I think you're well within your right, and I think, in Fred's case, you know, you should do that based on what you think is BSIA, and the agency may come along, after the fact, and say, well, we disagree, as it's spelled out there, and say, you know, we really don't think that you did make the recommendation on BSIA, and then we go into an iterative process, I guess, of debating what the final answer is.

I think, Shep, I would like to comment too on this idea of saying something is BSIA, versus saying something is consistent with BSIA principles, because they kind of sound the same, but they're

not, you know, and like, around the table, we talk about, okay, the assessment is BSIA, but I don't think we've ever gotten a determination from the agency that says this information is BSIA, and it's sort of hedged in saying that we think this is consistent with BSIA principles, which is like the language the Fred just read, and so, I mean, is it true, semantically, that we will probably never get a memo that says that stock assessment was the best information available. It will only say that stock assessment is consistent with the BSIA principles of National Standard 2.

MR. GRIMES: Well, I guess I would say I'm going to give you a lawyerly answer to this, and maybe it depends on context. Who am I representing, and in what context, but, yes, and, I mean, I think you're probably right, but I would say I hope you're not getting this stock assessment is BSIA ever, because there's no purpose or context to that, right, and, if it's this stock assessment is best available for making catch level recommendations for 2024 through 2026, that's great, because, as soon as an update assessment comes along, that one is no longer best available for some purpose, presumably, right, and then I think, you know, to me, each time you're making it -- Then, when the Secretary makes that legal determination in support of whatever action that can be challenged, that is consistent with based upon best available scientific information, and I suspect that's why you get the language you do, typically, because it's some action, when we're looking at it, that is consistent with, right? I mean, you're not going to say that changing the vermilion snapper bag and whatever is best available, and you're going to say that it's based on best available, and my guess is that just carries over into the lingo, and that's what you see every time.

DR. BUCKEL: All right. Is it clear to everybody? Crystal clear?

DR. LORENZEN: I mean, it still seems, to me, that the intent of the National Standard 2 Guidelines is really that it's the SSC's job to do this, and most of the things that are in here seem to have the intent to constrain the role of the SSC, and so I do find it a little concerning. So you're doing this for, and not you personally, but, you know, so NOAA is developing these for all the regions, and so they have the same purpose, of sort of reining in the SSCs a little, or is it -- What's the -- What do the others look like?

MR. GRIMES: I have not seen the others, and I'm not sure. They are developed around the regions, and I doubt they're council-specific in the Southeast, and this is the one that it applies to, is all three councils, but sorry, and I'm really not aware of what's been done elsewhere. My guess is it's pretty much the same, because this is all coming from, you know, the guidelines and the statute, by and large, that -- While I have the mic, if I could, just, in what you said, absolutely the SSC is the advisory body to the council in doing that, and then, if you think of it as, you know, sort of a bifurcated process, which it is, there is council development, and, when the council develops some action and submits it for secretarial review, that is when the next level, you know the second tier, of that comes in, and, you know, my advice to you guys here around the table would always be based on the record before you.

You stick to your guns, and you make the recommendation that you think the information supports and let somebody else worry about the rest. If, you know, there's a different view at the agency, and hopefully -- You know, you have a lot of Fisheries Service participation at this, and, you know, Amy is on the SSC, and you hear from Erik Williams, and you hear from people at the Science Center all the time, and so hopefully there is no disconnect, and, in my experience, it's pretty rare that there is a disconnect. Spanish mackerel, the workload and what extra stuff is willing to be done is maybe a little different of an issue.

DR. BUCKEL: Marcel.

DR. REICHERT: Well, you mentioned Spanish mackerel, and, obviously, you know, that's where some of our conversations were in this respect, and BSIA, but, you know, I want to bring it back to a more general issue, or thing, and, I mean, we've had instances where we felt, or maybe even said, that the assessment, or the totality of an analysis, is BSIA, but we felt that it was not sufficient to provide the council with management advice, and there's -- You know, that usually happens after lengthy conversations, but still what's the -- Some of it is in here, but, you know, what's the procedure, or, in general, how should we, as an SSC, approach that, because -- Anyway.

MR. GRIMES: Well, fundamentally, I dislike the notion, or the position, that this is best available, but it's not suitable for management advice, and that chafes me, and I think it's a tough record to justify. I think you can take it, if you go one level deeper, and say this is best -- Like saying the stock assessment is the best available scientific information, you know, relative to its kind of retrospective analyses, right, like stock status or looking at -- I mean, whatever specific things, but, because of these particular issues, we don't think that this assessment can be relied upon for projecting, you know, ABC and whatever, and I think that's getting kind of at where I've seen that, is, you know, we don't want to use it for management, but you are using it for management, and it is informing management, and, you know, just be specific about it, but if there is, you know, enough question about some information that you don't want to rely on it for making ABC recommendations, then just justify that.

DR. BUCKEL: John Carmichael.

MR. CARMICHAEL: Shep, I think what you said about you hope that you never get just a blanket this assessment is BSIA, and I think that's important, because it gets directly to like what Genny was asking, and what this SSC does, and I think kind of this idea of, well, you know, we don't think it's useful for management, but I guess it's BSIA, because I think then it gets down into saying, you know, what is the SSC doing from an assessment, and they're recommending catch levels, and maybe making status recommendation projections, you know, and so then I think it puts it on the SSC to say, okay, what is the best scientific information for the recommendation of the ABC, and then you go through it and you do that, and what is the best scientific recommendation for stock status, and you may decide that you can estimate overfishing, but not overfished, and what do you think is best for projecting future conditions, and you may say, well, we have them, and parts of this assessment are good, but we don't think this is robust and reliable for projecting future conditions.

Then I think that gets out of this idea of, okay, we have this assessment, and, overall, it's BSIA, and we have troubles with some parts, and so we say it's not useful for management here, and I agree with you, and that's a huge like record-building issue, because there's really nowhere in the Magnuson where it gets into that kind of, well, oh, but it's not useful for management, and like that's just sort of something that weaseled its way in, and so it may be more complicated for the SSC to go through and consider BSIA for each of their key recommendations, but it may be better than just saying, okay, the assessment is BSIA and feeling like, well, then you're obligated to use every estimate from it, even if some of them you don't think are reliable, and maybe that's backed up by a peer review.

That could help how we approach presenting these discussions to the SSC in the future, and maybe we just sort of parse it out, and it makes it clear, at each recommendation you're making, that you should use what you think is best, and, as Shep said, it's all about building the record.

MR. GRIMES: Thank you, and you reminded me that there was one other point, and I had forgotten to make it, and another important consideration is always keep in mind that, if it's not best available, and you're not going to use it, what are you going to use, because that's got to be better, and, if you're going to say, no, we're not going to use this assessment, but we're going to do, what, third-highest, you know, and so you may not like the assessment, but best available, if you don't have much, or anything, else, then best available may not be a very high bar.

DR. BUCKEL: Chris.

DR. DUMAS: What this conversation brings to mind, to me, is sometimes -- I don't know about you, but sometimes I try my best, but my best just isn't very good, right, and so I could conceive of a stock assessment that was the best possible stock assessment, in terms of using the best data that were available, and using the best currently-available analysis methods, done perfectly with no error, and that still basically came up with the result of we can't estimate squat, and we can't project squat, and so, therefore, that could be something that is best available, in all senses of the word, but it's not useful setting management recommendations.

Then to get, Chip, to your question of, well, then what do you do, maybe the best we could is we have no recommendations, or the best we can do is, you know, throwing a dart, and so I think that's sort of one extreme, is an assessment that's done perfectly well, using everything that's available, done in the correct way, but the information it provides is not informative, and it doesn't give you any information to help you achieve your goal better than maybe just, you know, what would be the alternative, like acting randomly, and you can't do better than that, and so that's one possible -- You know, that's an extreme, but then, you know, coming back from that extreme to something more reasonable, I could see something that, you know, a stock assessment that did use all the, you know, best available information and assessment methods, but the result was just not going to help us do better.

Yes, it's best available, but the best available just is not informative enough to help us improve what we're doing, and that could be a result, and hopefully we don't have that result, and it doesn't occur often, but it could, and, if that were to happen, we could -- You know, new information could come in the next day, or a new analysis method could be developed the next day, that could make that information all of a sudden, you know, new best available, and it could actually be informative and help us improve what we're doing with it. Thanks.

DR. BUCKEL: Shep, please.

MR. GRIMES: This is not entirely tongue-in-cheek, but I've seen that we don't have an ABC recommendations, and there are ramifications to that as well, and so like you should think -- You know, we really don't like this, and this is really bad information, but saying we don't have an ABC recommendation can be interpreted --

DR. DUMAS: I agree completely.

DR. BUCKEL: Amy.

DR. SCHUELLER: I work for the agency, and so maybe I shouldn't speak on this, but I will put my foot in my mouth anyway. I mean, with the Spanish mackerel example, my recollection of the situation is what I'm going to say next, and I think, if we hadn't had the Spanish mackerel example, maybe there would be a little less consternation around this table, but, in that example, the assessment was presented, and the SSC had concerns, and there was a request for some additional work.

The Science Center sent a memo, and you're saying the Center, or the agency, BSIA consistency until it's getting something from the council. However, in this memo, they don't just say we don't have time to do the work, but the sentences at the end state that the Science Center has determined that the use of data-limited approaches, in place of the current age-structured assessment, would not be consistent with BSIA, and the current assessment is superior to any product that can be derived from these simple approaches, even when considering the issues identified by the SSC.

My question is did legal counsel review this memo before the SSC received it, because I think the recommendation to the Center -- Maybe, if they just didn't include that, we wouldn't be in the situation we're in, because, if they had just said we can't deal with this right now, and you need to make some advice based on National Standard 2 Guidelines, 50 CFR whatever, this, and they stopped, we might be in a like -- There might be less consternation, and less difficulty, with this particular topic, and so I'm just confused as to what the rules actually are and whether or not they're being followed as they are specified to be followed. Sorry.

DR. BUCKEL: Go ahead, Shep.

MR. GRIMES: I did not review that in advance, nor would my office be involved in that. I mean, that's a Center thing, and I'm involved, primarily, in litigation and like regulatory actions, regulatory development of these sorts of things, and not stuff there with the Center, but, you know, I said as far as I know, and I have never seen those determinations, or that sort of language, but it is broad language, and, you know, that it is what it is, and, ultimately, I would say like I might not have advised wording it that way, but, you know, ultimately, you know, the Southeast Fisheries Science Center is going to be the one to review whatever action is implemented by the council, and it's going to all be based on this information. The same people who worked on that are going to be the ones working on, you know, the official secretarial review, and the memo that's written to support the agency's best available determination for that action, and so, you know, they get to make those kinds of calls eventually, and maybe that was premature, but it's a tough spot.

DR. BUCKEL: John Carmichael, to that point, and then I have Fred Serchuk and Genny.

MR. CARMICHAEL: I will share our thoughts on that, and that is we really didn't consider that to be a BSIA determination memo, and, dealing as we do with the record, and how often around the council table it is about the record, I would not consider a few sentences, at the memo, saying we've determined this broad group of analyses as not BSIA that haven't even been done, and aren't accompanied by a report showing the work, and I wouldn't consider that as building an adequate record that that type of analysis is not BSIA, and so I'm glad to hear that Shep hadn't looked at it, because I think it's kind of a slippery slope to come out and just say something like that without,

you know, the supporting evidence, and that's where what you build as a record is always so ever-important.

DR. BUCKEL: Genny, was it to that point? Okay. Fred Serchuk, please.

DR. SERCHUK: Thank you, Chair. There are instances, that I know of, where the BSIA evaluation is based on consensus of the participants on the SSC, and, based on that, the SSC provides a recommendation for ABC, or OFLs, but I know of a number of instances where the consensus was not unanimous among the SSC members, and, because of that, a minority opinion is often provided that explains why the proposed ABCs, or OFLs, by some members, are different than agreed upon by consensus, and I think that's important, because consensus doesn't mean unanimity. It is possible, and I know it has happened, that individuals can honestly disagree that the basis for the advice is not straightforward, and I'm just wondering whether those minority opinions have occurred in the Southeast, and I know they've occurred elsewhere. Thank you.

DR. BUCKEL: Fred, John Carmichael just mentioned, and that's my recollection, is that it has happened very rarely, and it was a long time ago, but we have had minority opinions.

DR. SERCHUK: I know it has happened in New England in the past year. Thank you.

DR. BUCKEL: Chip is coming to the table.

DR. COLLIER: So the SSC, the South Atlantic SSC, used to vote, and that is when those minority opinions were developed. They've gone now to the SSC is doing consensus, and so it's designed to allow everybody to speak their mind, and then the majority of the group -- Hopefully everybody gets to a decision that everybody agrees to, and that's why we've gone to consensus, as opposed to the voting, to avoid those minority opinions that quite often can lead to some sticky situations. Consensus -- You know, we want to get everybody's opinion, making sure that everybody is as comfortable as they can be with the decision of the group.

DR. BUCKEL: Thanks for the clarification, Chip. Marcel.

DR. SERCHUK: All I'm suggesting is I think it's important when you can't reach unanimity, and there is some strong feelings that the advice is based on issues that people really disagree with, and that the minority opinion be provided, if one exists, and it could be one person, or it could be a group of people within the SSC, that feel the consensus advice, while it is the advice that is provided, doesn't represent all the individuals, and here are the reasons why there's a minority opinion. Thank you.

DR. BUCKEL: Thank you, Fred. Marcel.

DR. REICHERT: I don't think that it has happened often, and I don't remember an occasion, but maybe John can help me. There is always, for us as an SSC, who works on consensus, a minority report option, and then, also, we have the transcripts, and so that reflects the thought process of individual SSC members, and the SSC as a whole, and so I think there's -- I do agree with you, but I believe there are mechanisms within this SSC to address that.

DR. BUCKEL: John Carmichael.

MR. CARMICHAEL: Marcel, you know, the way -- Other councils have been interested in like how do you guys get by without voting, and how do you define this consensus, and I've always said that like you may not necessarily be consenting to a single answer, but you are consenting to the information that you're providing to the council to describe the problem and the range of answers, and that's the way we've always approached it in SEDAR.

It doesn't mean that the group recognizes that there's a straightforward, clear answer to every problem, but it does mean that you think that, when you put it forward, you encompass the range of reasonable possibilities, and the risk and such associated with it, and I know we've had a situation where your reports have had some members, you know, stand up and say, well, I think it's important to get this line in there, to reflect kind of the other side, or the potential, you know, risk associated with that choice, and I think, overall, that's a much better approach to it than having say a minority report, because then you're kind of cutting somebody out from the herd, and, at least this way, everyone is saying, okay, I consent to your viewpoint, and I may not share it 100 percent, but I do agree that it has some validity.

The council has always felt that's more informative to them, because they do get a better chance of getting the full range of opinions, versus -- We got away from votes, because you could get a vote, and the vote is six to seven, and they're going, well, why, and so that's -- Really, consensus doesn't mean that you always agree 100 percent with every answer, but you do think that it's presented fairly in the report.

DR. BUCKEL: Thanks, John. Shep.

MR. GRIMES: Thank you. Sort of to that point, but I think a good thing to keep in mind is, when you make a recommendation, and I'm going to sound like a broken record, but it is all about the record, right, and, I mean, you've had all these meetings, and you make this recommendation. If you vote on it, and you provide me a seven-to-five recommendation, how much gravitas -- Like you barely got it, and it could easily have gone the other way, and, you know, what to make of these recommendations, and I guess my point is, the more united, the more -- The stronger your recommendation is, both in terms of how well you've justified it and, you know, the views, the support, amongst the group, right, then the stronger it is to the council, and the council sort of gets it either way, but the stronger it is to the agency, and then on up through the process.

If you make, you know, a very tepid recommendation, or have a review where the science -- Where your recommendation makes it clear that the science isn't clear on it, or settled, or pointing one way or the other, then there is more discretion, later in the process, to complete that record and guide it in a direction that may not have been the one you would have guided it, and so just, looking down the road, keep that in mind, as you deliberate and make recommendations.

DR. BUCKEL: Thank you, Shep. Genny.

DR. NESSLAGE: So there are -- Is this final? Is this document final?

MR. GRIMES: I believe that Jack said you could provide any edits or comments on it, and they would work it in, but I know this has been extensively reviewed internally, and it's been through

council staff at all three regional councils, and we've made a bunch of edits, and it's been gone through, and so I think it is very close.

DR. NESSLAGE: The reason I ask is because my favorite sentence in the entire document is followed by a sentence that really irks me, and maybe I'm misreading it, and so you might just need to -- Under g, page 4, and maybe it's just I'm taking offense where I shouldn't, which is usually the case, and so my favorite sentence is: "If the Center determines the scientific information does not represent BSIA, the SSC, in coordination with the Center, should establish and document an alternative basis for management recommendations until the new information can be obtained." Yay. That sounds like kumbaya, and we are all working together as scientists, in a collegial way, to come up with the best scientific information available to inform management.

Then, "If the Center determines that it is BSIA" after all, and I added that last little bit, "the SSC should reconsider using it as the basis for catch limits, or other management recommendations", and that's fine with me too, and okay, "to avoid the potential need for additional management action by NOAA Fisheries", as if our review, the time we've spent reviewing this, the time we've spent traveling here and arguing and deliberating and studying the issue and providing our advice, that the council is paying for too, by the way, is a bother to NOAA Fisheries. I would suggest you rephrase.

DR. LORENZEN: That is exactly the sense that -- I mean, I get it from, actually, a whole lot of these things, but this is the one where it is said most clearly.

DR. BUCKEL: Shep.

MR. GRIMES: Ultimately, it's the Secretary's responsibility to do this stuff, and there are requirements in the statute for secretarial actions, and that's where that is coming from. That's just intended to make the point that if -- You know, if we go through the process, and you end up with something that the Secretary can't approve, and the statute requires the Secretary to act, and, you know, it's a mandatory thing, then the Secretary does have the legal authority to go it alone, and, in that case, it would be based on advice, and, again, it's record building, and the deliberations from this body, and what got disapproved, would more than likely be part of the record for any subsequent action, and so we would have to, you know, address it all, and it would not be anything clandestine, for sure, but the Secretary has that authority, and that's what that type of language is intended to recognize.

We've had that -- I don't know that we've had that, but I have worked on two secretarial plan amendments in the Gulf of Mexico related to rebuilding plans for species, way back in the day, but, you know, those types of things do happen.

DR. BUCKEL: Thanks, Shep. John.

MR. CARMICHAEL: I would echo Shep and Fred earlier and say, well, it is a hierarchical system, and the National Standard Guidelines themselves actually say, as Fred read, that you should base it on what you think is BSIA, and so, yes, I think you could fall back on it and say, well, consistent with the National Standard Guidelines, we think what we initially provided you is BSIA, and then you could build your record, and stand with it, and the council may have to choose, and the council will have to side with one group or the other, and then, ultimately, as Shep says, it will come down

to the Secretary, but I think, if you guys are really set on something, make a great record and dig your heels in.

DR. BUCKEL: Chris.

DR. DUMAS: To me, this is like the journal article review process, and so the Secretary is like the journal editor. They get the final say, right, and there is two reviewers. There is the SSC, and there is the Science Center, and there are two reviewers, and sometimes the reviewers agree, and sometimes they don't, and, you know, when they don't agree, then it's up to the journal editor to make the final decision, and sometimes that's hard, and the Secretary, I guess, under the law, from my understanding, from what has been said, is the ultimate authority.

They have the authority, and the responsibility, to make that decision, based on advice from the SSC, and I think -- You know, I think it's in the council's, and the Secretary's, best interest to have an independent SSC, and to listen to what they say, so that they get good, objective advice to help them make better decisions, and I think they're more credible when that happens. If that were not to happen, and if they did not have an independent SSC, or have independent -- You know, that, ultimately, can be taken up by the voters, and, ultimately, if the voters don't like the way things are going, you know, they can change the people in charge, ultimately, but, in my personal opinion, and experience, on this, I think that we operate in an independent and objective way, and we try to give our best opinion, and we try to coordinate with the Science Center, and I think they listen to what we, as the SSC, say, and I think the process is working well.

Sometimes -- Usually we do agree, and sometimes we might now, and, in those cases, the council, and then the Secretary, will have to decide what to do, based on the advice they get from both sources, from both reviewers, in my analogy, and so thanks.

DR. BUCKEL: Fred Scharf.

DR. SCHARF: I like the analogy, except the distinction is, in this case, that the Southeast Fisheries Science Center is also the author, and so they're the author and the reviewer.

DR. LORENZEN: And the editor.

DR. DUMAS: True, but they're not the only reviewer.

DR. BUCKEL: Okay. Are there other questions? I think we can go back to the agenda items, and we've had a good discussion. We've got -- It has shed some light on what we can do. Judd, if you can scroll up, and folks can read what Judd has so far for the first bullet, and then we can talk about the second bullet. Chris.

DR. DUMAS: One more quick point. To the last sentence in Part g that Genny was referring to, in that last part, "the SSC should reconsider" -- "If the Science Center determines that it is BSIA, the SSC should reconsider using it as a basis for catch limits." That just says that the SSC should reconsider, but we don't have to change our determinations, or our advice, and it's just saying, hey, can you give it a second look, and we could stick with our original decisions and advice and recommendations. What do you say? I would like to hear, and, Genny, what do you think?

DR. BUCKEL: Genny.

DR. NESSLAGE: I agree with you completely. I hope everyone listening understands that that is what this document means as well, that we cannot be ordered to set an ABC based on -- Otherwise, if we go down that route, we might as well go home, because all we're doing is rubber-stamping the information coming out of the Center, and you can calculate your own ABCs. There's no point in this body, frankly, and so, as long as everyone understands that -- I am perfectly fine, happy, accepting that I'm an advisory board to an advisory board, and I may get overridden, and that's fine. I'm fine with that, but I don't want to be told that I must set my ABC based on the assessment that's been provided, or whatever other information has been provided, because then it's a waste of my time.

DR. BUCKEL: Well said. Thank you, Genny. Okay. Judd is capturing that. Fred Scharf.

DR. SCHARF: Just to reiterate, you know, what Genny said before about the distinction between the sentence before and then that last sentence, you know, I think that, if there were some language in the last sentence that reflected, you know, something about in coordination, or a spirit of consensus, I think we would all feel a lot better about the last sentence, if there was -- It's just the phrasing of that sentence that's the problem, and so I think just making sure that we capture that in our comments. Since they are considering edits, maybe they will take a hard look at how that's written and think about that.

DR. BUCKEL: Fred, do you want to provide a potential edit there now, or do you want a similar -- And Genny, but a parenthetic statement about coordination with the Center that shows that there will be iterative back-and-forth still?

DR. SCHARF: No. Well, I think I could, but I don't know if I could do it on the spot.

DR. CURTIS: We'll put a placeholder down here for the benefit of consensus.

DR. SCHARF: Maybe we can suggest some language changes for the final report, like when we do the final report tomorrow, and so maybe some time to think about it a little bit.

DR. BUCKEL: That is specifically for the sentence in 1g.

DR. SCHARF: It's in the first bullet, too.

DR. BUCKEL: Thanks, Judd. Are there other items that we discussed that we want to make a point -- I think, underneath the second one -- We're talking about the outlier, right, the outlier situation, being this sentence that in Spanish mackerel, but, the majority of the time, there is an iterative back-and-forth process that works very well, and I think maybe stating that, underneath that -- Somewhere here, and I value that, and I learn a lot from it, and it's the scientific peer review process, and that's what this body is here to do, is a peer review, and, when the Center doesn't agree, they come back with their argument, and we can go back and forth and come to a consensus, and that's the --

That's what we often do, and just to make that point, that the Spanish mackerel situation was an outlier, I guess, and so we hope that we don't get into that situation, but, when we do, we should

have a plan written here of what this body is comfortable with doing, and it sounds like what I've heard folks saying is that we do have that, and we don't have to accept that you have to use this model to set your ABC, and we have leeway, and maybe -- There may be management actions taken against that later, but, as an advisory body setting the ABC, we can use alternative approaches, and so we want to capture that too, and that's my take on what was being discussed, but please correct me if I'm wrong. As Fred just said on the side, as long as we keep a good record, keep Shep happy, record building.

DR. REICHERT: Perhaps it's good to reference 1g under the when the SSC is asked to reconsider the recommendations, because that's what this is referring to, correct, that last sentence in 1g.

DR. BUCKEL: What was the edit, Marcel?

DR. REICHERT: Just, after -- If the SSC is asked to reconsider their recommendation, and then, between brackets, "see 1g". Thanks.

DR. BUCKEL: Maybe take that majority of the time, the iterative process, and building a consensus, and that could be the first bullet, and take it out of the 1g, or that's one potential. What do folks think about that? Do you want that in this section of -- I agree with your edit, Marcel, but just the comment I had was that I wanted there to be a statement that, the majority of the time, this process works as we enjoy it, right, and it's an iterative process. Do we want that in this paragraph, talking about the 1g sentence, or do we want it as its own bullet, or that's fine where it is? Now that I read that, that's fine. Okay. Moving on.

Are folks happy with the language we have there? Judd, some of what we have, what's written there, I think deals with that second -- Maybe this is where we make the statement that we can -- If it's overridden, if the determination of BSIA is overridden, that we still have the leeway to set ABC from a different -- Using a different approach. Genny.

DR. NESSLAGE: So the question is what are the implications, and I can think of a few. If this is a one-off thing, and we're all getting really fussy about something that hurt a lot of people's feelings, that's one thing. Most of the time, as you mentioned, Jeff, we get along really well, and there's a lot of great support from the Center, and the people who work there are fabulous, and they do great work, but sometimes we are going to disagree, and, at the end of the day, we may not be able to come to consensus on what science should be used for ABCs, in which case, if our recommendation is overridden, and they have every right to do so, and that becomes a pattern, and not a one-off, because we can be wrong too, and everyone makes mistakes, and everyone misses things, and everyone -- You know, we may just be wrong, and this is a mechanism for dealing with that as well, and that's fine, but, if it becomes a pattern, that's where I think -- The implication for scientific-based management and the peer-review process is that there's no way for a Southeast Center assessment to fail.

In other regions, in other agencies, a stock assessment undergoes peer review, whether it's external or through an advisory board, and it can fail, and then it is not allowed to be used for management, and you have a fallback. I was just re-reading the Punt et al. paper on what happens when stock assessments fail.

I don't know, and I'm looking at the SEDAR folks, and do we ever allow the peer reviewers to say this assessment fails? Yes, and I'm seeing nodding heads, multiple nodding heads, from the other side of the room. If the stock assessment fails at SEDAR, and/or it fails with us as the review body, if it's an interim or an operational assessment, but that management advice, alternative management advice, that comes out of this body gets overridden by NOAA, and so that would imply that the peer-review process has failed, because the failed stock assessment gets used in management, and so there's a loophole here for failed assessments to be used in management. I don't know if everybody is comfortable with that, but that's one of the implications, and that just may be the way it is, but maybe I am misinterpreting, and John is going to tell me how.

DR. BUCKEL: John Carmichael.

MR. CARMICHAEL: I don't know if I can, but I do know that like, you know, within SEDAR, if an assessment does not get past the peer review, then it wouldn't come to you, usually. We would report-out on it, but, you know, we have had some that were like don't go forward on that, and then it doesn't -- You know, the peer review then -- If that's not passing, then it's not going to come to you to be developing fishing level recommendations, at least in most cases. It would have to be a real extraordinary situation, and we haven't been there. Most of the ones that didn't get past peer review would come to you and say, hey, and like I don't know, and the tray triggerfish twice, but we would come to you and say, hey, this didn't make peer review, and this is what the peer review issues were, and, you know, this is how we're going to consider to rebuild it and recover from it, I mean, and then we get it back into the schedule and do all that good stuff.

You know, at least in that case -- Now, I think, if it passes peer review, and it comes to you, and you say we don't think this is appropriate, then that does create that bit of a gray area, but I just wonder if that isn't where the idea that you are not passing judgment on the assessment as a product, and you take it or leave it in its entirety, but you are really able, at that time, to see what in that assessment do you think is useful, that can help support your recommendations in some way, and so it may not be that you agree that the assessment is, you know, reliable for all the different things that it can provide, but maybe you think it is reliable for some.

Maybe you feel like they developed a good index, and they've got a good relative indication of fishing mortality, and we have had cases where -- I feel like we have, where, like you said, an assessment -- You feel that it gives you confidence that overfishing is occurring, but you can't put a quantitative value on it, those sorts of things, and so I would hope that, if something got through peer review, and got to you, and you raised concerns, which, in most cases, would be based on your stronger knowledge of the particular region and the datasets and the species, which is what you really bring to the table above and beyond those peer reviewers, which are kind of, you know, nerds burrowed into the model, and so then I think you could like figure out what information you have, that you can use from that assessment, to support really, you know, your recommendation on status and whatever the fishing level should be, but, if you rejected the whole thing outright, then I think you would have a bit of a quandary.

I think -- You know, if I look at other regions, out in the Pacific, they have something called STAR, and they do a lot of assessments, and it's similar to SEDAR and SARC, but one of the things they have is a mop-up panel, and I feel like the mop-up panel, as I heard it described many, many years ago, would do things like that, where, you know, if something came through, and the SSC had

some issues, it got some cleanup, kind of like, you know, House and Senate resolutions get together with a joint committee and hash it out.

I would hope, if we got in that situation, we could convene something where we could kind of hash it out with the Science Center and figure out, you know, how to resolve it, so it wouldn't just stop and then the Science Center potentially, you know, come in with that loophole and say, tough, use it anyway.

DR. BUCKEL: Genny.

DR. NESSLAGE: Right, and so that sounds all super reasonable to me. If an assessment, a SEDAR assessment, fails outright, we never see it, but we are the review body for operational assessments and interim assessments, should they ever be used, right, but we're not allowed to fail it outright, and is that essentially what we're being told? Right? I mean, we have to set --

MR. CARMICHAEL: I think, as a peer reviewer -- I suppose you could, you know, and, I mean, that's -- You're filling that peer review role, and I would think you have the rights of any peer reviewer, and, if you don't think that that assessment meets the standards, then that's what you would be saying, and, you know, that's when they fail it outright.

What has happened, in the past, is they were like, you know, this data has been treated wrong, and this assessment model is configured wrong, and there is some significant part that was overlooked, and I would hope that you have a pretty strong reason for why you're saying that, and it's not just, well, we don't think you did a very good job.

Kind of like what Chris saying, you could have done a really great job of putting an assessment together, but the data were not informative, or just not up to the task or whatever, and I hope that you would make enough case that it would still be -- That your decision would be respected, and I think this is another reason why it's always so important that, you know, through SEDAR, having these panels, and having you guys involved along the way, and why we kind of try to shy away from the straight-up just, you know, do it through an analyst, and so the best they can, and bring it to you straight up and you haven't looked at it, because that, to me, is much more of a situation where you could raise some issues that could have been resolved, if you had been consulted, that lead to you rejecting it, but I don't see why, from what I've read in the guidelines, when you're filling that peer review role -- It does sort of come to you say do you think this is consistent with BSIA principles.

You know, if you don't think it is, for some reason, and there's, what, seven criteria that are on that list, and I think it would be incumbent on you, as part of your record, to cite why you don't think it's consistent with the principles and any other concerns you have with the data.

DR. BUCKEL: Kai.

DR. LORENZEN: I have one -- It seems to me, to my mind, it looks like the intent behind this is mostly sort of streamlining the process a little bit, so it's sort of, you know, the situation we had with the Spanish mackerel, where, you know, it was perceived that, you know, we were slowing things down, and they just wanted to get done with it, and I presume that is the sort of -- The general intent of this piece, but I did want to bring up another situation, where the same might

apply, and we don't see it that often, but so, when say the agency is under political pressure to do something, and they want that science to pass, so that they can do, you know, what is politically expected from them, and I think you can guess what example comes to my mind, then it can become very, very important for the SSC, as sort of, actually, the most independent body in the room, to put its -- You know, its feet down and say, no, this is not good science.

That's a -- Luckily, we don't get those situations often, but, every now and then, we might, and I can also see, in the South Atlantic, situations where that could happen, and I think it's -- So it sort of weakens the SSC's ability to -- I don't know how best to say that, but to counteract, you know, agency decisions that may be taken under political pressure, and so that, I think, is something that is worth also mentioning.

DR. BUCKEL: So something along the lines of the SSC is the -- It would be one of the most objective peer-review bodies, or the SSC --

DR. LORENZEN: Well, the SSC is less subject to political pressure than almost any other entity in this process, because, I mean, the agency -- Although there are many ways of trying to insulate the agency from it, of course, those are imperfect, and so I think that's important. I think it's one of the most -- Independent is perhaps more important than -- Or independent and objective, but the independence, I guess, is the key point.

DR. BUCKEL: How is that, Kai? Thank you, Judd.

DR. LORENZEN: I think it sort of captures what we're trying to say.

DR. BUCKEL: Great. On that second bullet, how do folks feel about this would demonstrate failure in the scientific peer review process, and it's more broad than just the SSC, and so change "SSC" to "scientific". Are folks happy with where we are with this, or do we want to say something about, if we got into the situation where the Center told us something was not BSIA, but we felt it was, how would we move forward, or we didn't think it was BSIA, but the Center did, and we needed to use something else, and do we need to do that here, or -- Genny.

DR. NESSLAGE: I think I had started to mention the Punt et al. paper, where they described that other regions have fallback plans for when this sort of thing happens, when an assessment fails, when there's disagreement about how to move forward, and that can be pretty prescriptive, and so I don't know if we want to go there, but just I would put it out there that, you know, we might want to take a look at that paper in the future, should this happen again, because the council knowing what we're likely to do, should this happen again, I think -- Or should this start to happen regularly, and we would need some sort of process, and I'm hoping that it doesn't, and I don't think it will, but fallback plans would be the way to provide more of a stable, consistent reaction, or response, from the SSC in those situations, but hopefully we don't need to develop one.

DR. BUCKEL: So would you like a bullet on that, that maybe a fallback plan could consider the Punt et al. if a stock assessment failed document as a path? Chip.

DR. COLLIER: So there is procedural guidance ten-dash -- I am trying to remember which one it was, and I would have to look back, but, basically, it's going through National Standard 1, and there's those different tiers that are listed in there. You have your age structure, which is the

highest tier, and then you have a biomass, and that's the next tier down, and then below that would be some data-limited models, even though some of the data-limited models might be more advanced than a biomass model.

It does lay out the process for that, where stock assessments are supposed to be provided, and you're supposed to have enough information to go to the next tier down, if needed, and there's also the process when you're looking at rejection. The SSC reviewed that document a few years ago, on what to do, whether or not it is take the current assessment, take the previous assessment with new years added on, take the previous assessment as it was, or go to the next tier down, and so there are different options that have already been laid out in some of the procedural guidance from NMFS, and that's why, when we were looking at Spanish mackerel, we had the next tier down, which was following some of that procedural guidance and trying to be consistent with that.

DR. BUCKEL: Thank you, Chip. Do we want to add that here? Genny.

DR. NESSLAGE: That makes perfect sense, I think, and would work well when we can agree. When we don't agree, and let's say the Center thinks their age-structured stock assessment is BSIA, they're not going to produce for us a data-limited approach, or an age-structured production model or something, and so I think there's some loopholes in there as well, but you're right that there is some -- You're right that there's definitely some fallback, and that can be helpful.

DR. BUCKEL: Thanks, Genny. Any other comments on the text at this point? We get to see it again. I don't see any hands in the room. Judd, or, Chip, any -- No hands online, Chip says. We will take a ten-minute break until 3:55, and then we'll start with the SADL longline, and so, Kevin Craig and Marcel, be ready at 3:55. Thanks, everyone. Good discussion.

(Whereupon, a recess was taken.)

DR. BUCKEL: Okay. Let's go ahead and get started. All right. We're at Agenda Item Number 9, South Atlantic Deepwater Longline Survey Review, AKA the SADL survey, SADL, and we have Dr. Kevin Craig from the Southeast Fisheries Science Center, and Marcel Reichert doing the presentation, and so, Kevin are you going to drive that? I think Judd is getting that set up for you, so you can share.

SOUTH ATLANTIC DEEPWATER LONGLINE SURVEY REVIEW

DR. CRAIG: I think me and Marcel are going to tag-team this. I'm going to give about a fifteen-minute overview of the South Atlantic Deepwater Longline Survey, or SADL, and then I think Marcel is going to talk about the details of the review that we conducted this summer. This survey is managed by a coordination team that includes myself, Todd Kellison, Blake Price, Christina Schobernd, and then Walley Bubley and Kevin Spanik at South Carolina DNR, and so we meet weekly to discuss various aspects of the survey.

This is a deepwater bottom longline survey. The intent is that it supports stock assessments, by providing unusual types of information, catch rates, that can be used to develop abundance indices, age and length compositions, and life history information, both otoliths and reproductive samples. Originally, there were six focal species, and that included the three listed here, as well as

yellowedge grouper, speckled hind, and warsaw grouper, but, on those later three, the catch rates are very low, and so, in effect, the main species are blueline, golden, and snowy.

This is a pretty new survey. It was implemented in 2020, and it's been repeated annually since then. We just finished up the 2023 season two weeks ago, and the sampling occurs from late July to early October, over about an eight to ten-week period, and this is a cooperative survey with industry, and so we contract with industry participants, and they provide their vessels. They're using standard sampling gear, and sampling methodologies, and we provide the stations to sample, which I will talk about in a minute, and then we work with the Southeast Center observer program, which collects all the data, both the catch information as well as the life history information.

Just the basics of the survey design, the spatial extent extends from the North Carolina-Virginia border to southwest of the Florida Keys, and you can see that picture here in the map, the shaded areas, and it extends over a depth range of seventy-five to 366 meters, and that encompasses the shelf break and upper slope, and that depth range, and geographic extent, was based on a number of early meetings with the fishermen, as well as some cooperative research projects, and it's intended to encompass the main habitats of both blueline and golden tilefish, as well as snowy.

The sampling occurs in these four zones, these colored areas shown here, and they extend from North Carolina, in yellow, South Carolina and Georgia in blue, central Florida in orange, and then south Florida in pink, and the industry participants typically sample within one of these four zones, and so it's mostly one fisherman per sampling zone.

The survey design is a stratified random design, and there are geographic strata and depth strata, and so there has been some minor changes in the nature of the stratification. In 2020 and 2021, we used one-degree latitudinal bins that extended from the North Carolina-Virginia border down to the Florida Keys. In 2022, we shifted that to half-degree bins, but within the same survey area and with the same level of sampling effort, and so it was a minor shift from one-degree to half-degree bins, and then the depth strata is a shallow strata from seventy-five to 145 meters and then a deeper strata from 146 to 366 meters.

We expanded the survey north this year, in 2023. This was driven largely by the Mid-Atlantic Council. They were interested in expanding the survey northward, and they provided the funding to do that, and, on the left here, it shows that expansion beyond the northern survey extent at the border to almost, I guess, I just north of Delaware Bay, and so we added these additional strata.

On the right, it shows the actual sampling stations that were realized during the 2023 survey year, and an important point here is that, you know, there's no change to the South Atlantic survey design, in terms of the sampling effort, the stratification, or the timing of the survey. This is just an extension northward, using the exact same methods that we used in the South Atlantic, and so this is something that occurred in 2023. We don't know if it's going to be a permanent feature of the survey, and we're in discussion with some of the South Atlantic Council staff regarding that issue, but mostly what I'm going to talk about today is the first three years of the survey, where the extent ended at the North Carolina-Virginia line.

A little bit on how we select the sampling sites. There is equal allocation of effort to each one of those strata that are defined by depth and latitudinal bins. In the first year of the survey, the

sampling effort was relatively low, and there were three sites per strata. The effort quadrupled in 2021, and we went to six sites per strata, and we've maintained that during 2022, as well as 2023.

The site selection for the survey was a bit complicated in the first couple of years, and I will explain why that was. There was a mix of three site types, and so, for the stations to be sampled in each strata, a portion of them were chosen at random within those stratum boundaries, with the only constraint being that they were two nautical miles apart. Some portion of those stations were chosen from a database of known hardbottom sites, and so I will call that universe random, but these are known hardbottom locations within the survey footprint, and then some of those stations were chosen by what we call captain's choice, where the captain of the relevant vessel was able to choose the sampling location at their discretion, with the only constraint that it be within the specified strata boundaries.

The reasons for that are, in the first few years, this was a new survey, and this was an unsampled area, and a number of the focal species utilize hardbottom, as well as unstructured habitats, to different degrees, and there is -- The knowledge of that hardbottom distribution is not well known, and it's undoubtedly patchy, and so there was concern that, you know, a strict random site selection approach would limit the sampling, and limit the catch rates, on those hardbottom habitats. We have since gone to a fully random site selection approach, beginning in 2022, and I will go through sort of the rationale for that as we move through the presentation, but it is fully stratified random, with randomly-selected sites within each survey strata.

This just gives you a sense of the sampling effort, and so, as I mentioned, 2020 was the first year of the survey, and we had forty-six sites, and so relatively low effort. That increased in 2021, and both of those years used the mixed site selection approach, and so about a half to two-thirds of the stations were chosen at random, with about a quarter, to a third, chosen from this database of known hardbottom areas, and then the remainder based on the captain's choice, and, as I mentioned, in 2022, the survey effort remained high. We had 174 stations, and those were chosen completely at random, and so it gives you an idea of distribution of those sampling sites.

The methodology, and, so, as I mentioned, this is cooperative with industry participants. We do use standardized gear, so everybody is fishing the same gear, and so three-sixteenths-inch main cable, three-foot gangions, 12/0 circle hooks, and the mainline length is three miles. We did use a four-mile mainline length in 2020, but it was changed to three miles in 2021, and that's what we're using going forward. There's 150 hooks per mile, and they're baited with squid, and we do collect depth information from the vessel, and we have a temperature logger attached to the end of the mainline, and so we get temperature information as well.

Each of the sampling trips occurs -- It varies among fishermen, but they're anywhere from two to three days up to sometimes five to eight days in duration, and they're sampling three to four sites per day, during the daylight hours, and, as I said, the survey is completed over about an eight to ten-week period from July to early to mid-October.

The data is collected at-sea by the NMFS observers, and so this is the typical survey data, station data, the data, lat, long, depth, time of day. All species are identified, and they're all counted, and they're all measured for total length and fork length, and then a subset of those are sampled for biological samples, and I will show that in a moment, but we have a set of priority species that we're sampling otoliths from, as well as reproductive tissue, and then there is a larger set of non-

priority species that get sampled secondary to the priority species, and sort of as time permits, and, in large part, at the discretion of the observers.

This gives you an idea, and I mentioned this is a multispecies survey, and this is basically what was caught in 2022, and so eighty-four species in total, and you can see these are ranked by mean catch per unit effort, with information on frequency of occurrence and the total counts in the first two columns. Golden, blueline, and snowy are typically within the top ten species or so, in terms of catch rates, but there are a number of other species of management interest that are caught in the survey. Some of those are in reasonable numbers, like almaco jack, red porgy, and red snapper, and mutton snapper, and then there's a number of species that are fairly low sample sizes that are also of management interest.

This shows a distribution of the three focal species for 2021, just to give you a sense of where they're occurring, and so blueline on the left, mostly off of North Carolina, particularly north of Hatteras, and then south Florida has more sporadic catches throughout the remaining area of the survey. Golden tilefish is primarily off of central Florida, but also south Florida up through North Carolina, and then snowy grouper have -- They have lower catch rates overall, but more evenly distributed over the survey area, and they tend to be more common in the shallow strata.

This shows the proportion positive for the three survey years that we've looked at so far for a number of species, and I'm going to focus on blueline, golden, and snowy, and so the proportion positive, which is one metric that we think about, in terms of index development, has ranged from about 17 percent up to 25 percent. What was encouraging is that, when we went to the fully-randomized design in 2022, and so there was no dedicated hardbottom stations or stations that were chosen strictly by the captain, and we did see a slight drop in the proportion positive, but it wasn't extreme. We were getting over 25 percent, 21 percent, proportion positive for the three focal three species, when we went to that fully-randomized design, and so that was part of the basis to continue with that, and so, going forward, we don't plan to use the database of known hardbottom stations, or captain's choice, in terms of selecting the sampling sites.

For the biological samples, as I mentioned, there are six priority species, but, in effect, we mostly get, and sample, golden tilefish, blueline, and snowy. We do sample a minimum of twenty of those per site, for both otoliths and gonads, and then every fifth fish, after that minimum of twenty is met.

Then there's a suite of non-priority species, that are mostly other snappers and groupers, that we sample, as time permits, up to a maximum of twenty per site across the species at a given station, and then the observers do have some discretion, and so they can sample other things after they've met the requirements for the priority and non-priority species, and that's basically dependent on time available, whether they're a managed species or not, how rare they are, and so they do, for example, collect some red porgy and vermilion snapper and almaco jack and black sea bass, and so those tend to be more effectively sampled by the SERFS survey that's up on the shelf, but, you know, this is just -- We could potentially use these in combination with those, with that survey, to get a better handle on the age and reproductive state of those species in the deeper water.

This just shows the collections to-date, and so this is the species, and we're taking both otolith and gonad samples, and so most of these are golden tilefish, blueline tilefish, and snowy grouper, but then you can see the list here of the non-priority and ad hoc species that we collected biological

samples from, and so that gives you sort of an overview of the survey. I think there's a lot more details in the workgroup report, and I think Marcel is going to go over what we did, in terms of reviewing the survey.

We did just complete the 2023 survey, and, as I mentioned, it was expanded to include these Mid-Atlantic stations, and the plan is to repeat this for 2024. We're planning to use the fully-randomized design, with a similar level of sampling effort. It's unclear whether the Mid-Atlantic expansion is going to be ongoing. You know, we have a meeting with the Mid-Atlantic Council staff next week to start discussing that.

A number of the life history samples are currently being processed, and we are doing an annual meeting with industry participants, and we did the first of those last March, and we hope to do that again this March, just to kind of go over what's working, what's not working, and what might need to be modified, in terms of executing the survey, and so that was all I had. If you want to ask questions, we can do that, or, if you want to move on to Marcel, and save questions for the end, that's fine as well, and I'll be around for the rest of the day.

DR. BUCKEL: We're going to go to Marcel, and then we'll ask questions to you both after Marcel is done. Go ahead.

DR. REICHERT: Thanks, Kevin, for that overview. First of all, I would like to thank the working group members for their input and the information they provided, and I think we had very productive discussions. We discussed the various details of the survey, and asked for clarification, and I don't have a presentation, but the key ones are detailed in our review report, and I will highlight here the main conclusions and recommendations, which are on pages 4 and 5 of our report.

After our discussions, the working group concluded that the current stratified simple random sampling design is suitable for the survey. We also felt that the 2023 expansion, the addition up to thirty stations, that Kevin mentioned in the north, with effort proportional to the remainder of the sampling area, should continue in the future, if at all possible. We felt that there is strength of the collaboration with the industry, but there is also potential weakness, because of the potential uncertainty of participation.

Other strengths were the region-wide sampling, the fully-random sampling design. However, as Kevin, I think, mentioned, this fully random sampling design can also reduce catch rates, but future optimization could improve the sampling efficiency. We actually had some discussion about the optimization of sampling, by possibly restratification, or reallocation of sampling, and any changes in the survey stratification, or allocation, would need additional years of data before being considered, but the development of some of these analyses, approaches, can begin sooner.

The analysis of optimizing the survey will depend on a variety of factors, obviously, including how modeling of the index is approached and the available data. Other working group members may be able to provide more details that were discussed, but were not part of the report.

Furthermore, we also considered the current gear and deployment methods appropriate for the survey. The initial choices were made with considerable input from the industry, results from workshops, and the results of several pilot studies, some by South Carolina DNR, and review of

published information, which we considered a strength. The choice of the methods was a good compromise, and it included considerations for safety and gear loss, targeting a variety of species and fish length, and the available funding and time.

Another strength is that, although there are three main focal species, as Kevin mentioned, this is basically a multispecies survey, with the potential to provide useful information for a range of species. One key weakness is that, besides depth and temperature -- Temperature is the only hydrographic or habitat variable that is collected, and I will come back to that in our research recommendations.

The working group recommends that the focal species should indeed be golden tilefish, blueline tilefish, and snowy grouper, with yellowedge and warsaw grouper and speckled hind as the secondary focal species, and an important consideration for us was that that was the original impetus for the survey. Any considered survey optimizations, as I mentioned earlier, should be based on those focal species, is what we felt, but the strength of the survey is that other important shelf species are caught and sampled, and the data will be available for assessments and management of those species.

Kevin talked a little bit about the biological samples that were taken, age and reproductive tissues, and we felt that those were appropriate for the survey, but it was a little unclear how exactly the sampling of the focal species was occurring, how the sampling of the species was occurring, and so we felt that that should be clarified, and perhaps made a little more consistent and transparent, and we also felt that the collection of samples from the focal species should be prioritized as much as possible. A possibly minor weakness was that no samples for fecundity studies were collected, and so, if that is necessary for assessments, that should be done in a separate study.

We also discussed that, if future funding limits the sampling, collection of the samples should continue, and then the collection of age structures should be prioritized, and then perhaps the processing could be done later, when funding becomes available. In terms of when this index should be used for -- When the data should be used for index development, we felt at least five years of survey data should be available before an index of relative abundance should be considered for use in stock assessments, and that was, in part, based on some of the previous conversation that we had within this SSC and elsewhere. However, we also felt that the index development, and the monitoring, of the possible index for contrast, variance, et cetera, can start earlier.

In addition, as Kevin mentioned, there were some significant developments in the survey over time, and we felt that the data from 2020, which is the first year of the survey, should not be used in the index development, and the data from 2021 should be viewed with caution, as samples were not yet collected with a fully random design, and data from 2022 onwards should be fully considered for index development, and, of course, information from -- Other information, such as length and age and reproduction, can be used at any time.

We mentioned, or recorded, some research recommendations in our report, and I mentioned the collection of whole gonads for fecundity studies, and also the collection of potentially more habitat information, including current and structure, analyze the effect of the first-hook-in and last-hook-out strategy on catch rates, and the seasonal timing of the survey may warrant further investigation.

We also felt that, because of the survey design, and given the logistical and funding restrictions, most of these research recommendations would require additional funding and should be conducted outside the normal operations of the current survey design, and that completes my report.

DR. BUCKEL: Thank you, Kevin, and thank you, Marcel. Are there questions for Kevin or Marcel on the SADL survey and the report? Alexei.

DR. SHAROV: Thank you, Kevin. It's good to hear you again, and thank you, Marcel. Just a few details on the survey, and what have you learned from the captain's choice approach, and I'm still not clear -- They certainly had a reason for this, but did it help? I mean, in the third year, you eventually moved to a totally random design, and, second, among the parameters that are measured and recorded, is the bottom time currently recorded, and is it considered as a potential characteristic to redefine the strata?

DR. REICHERT: The bottom temperature is recorded, and I am probably going to ask Kevin, or Wally, to address some of your other questions.

DR. SHAROV: I didn't mean the temperature, but the bottom structure, the type of the sediment, soft sediment or hard, et cetera, but the habitat.

DR. REICHERT: No. Other than -- It's my understanding that, other than when we know they are sampling bottom that was previously characterized, that information is not recorded, or determined. In terms of the captain's choice, Kevin, or Wally, maybe you can address that?

DR. CRAIG: Wally could address that. I would just say that, you know, it wasn't obvious that the captain's choice stations always had higher catch rates than the random stations or the universe random stations, and so, you know, it did sort of in some cases, but it wasn't consistent. You would think that the captain's choice would consistently have higher catch rates than the other two site selection methods, but that wasn't the case.

DR. BUBLEY: Part of the reason for the captain's choice was, as Kevin mentioned, we didn't have a good idea for some of the stratum, what was available, and the people that would probably have the best idea of where fish potentially could be that had habitat would have been these fishermen, and so the thought was essentially try to use everything that was available to us, at least in the first year, to try to get an idea of what was happening, and then, as we were going, if we saw something, and we did. When we started to compare the randomized sampling with captain's choice, or the universe random stations, we saw that there wasn't a considerable difference between them, and it was a lot simpler to deal with the statistical aspects, on a later basis, if we just used the randomized sampling. Captain's choice was just a way to mitigate, without knowing what catch we were going to get in the first year.

DR. BUCKEL: We've got Steve Turner and then Jennifer and then Jason.

DR. TURNER: Let's see. Any indication of hook saturation, in other words, a large number of hooks occupied by some sort of catch?

DR. REICHERT: If I remember correctly, that varied a lot, and that's why one of our research recommendations is to analyze the catch rates and hooks, but, again, Wally or Kevin, maybe you could clarify further.

DR. CRAIG: Yes, and I think that's on the list of things to look at, and it's 150 hooks on a three-mile longline that's set for sixty minutes. You know, we don't see saturation with the focal species, you know, and so we're not catching, necessarily, 150 blueline, golden, or snowy at a given station. What we haven't looked at is whether there is some saturation effect from other non-target species, and, you know, if you look at that list of species that I showed earlier, there's things like, you know, pale spotted eels, that can be quite abundant in some cases, and so I think that's something we need to look at, but we haven't done so yet.

DR. TURNER: So you said 150 hooks in three miles, but the presentation indicates 150 hooks per mile.

DR. CRAIG: Yes, and that's right. I misspoke. It's 150 hooks per mile for a three-mile longline.

DR. TURNER: Okay. Thank you. Let's see. Marcel, you mentioned first-in and last-out. Is information being recorded on the amount of time each hook, or some group of hooks, is actually in the water?

DR. REICHERT: No, and I believe only the start of the deployment and the end of the deployment, or the start of the deployment and the start of retrieval, or the end of retrieval, is recorded, and so not by hook, and that is part of, again, that first research recommendation, that that's something that we potentially should look at, because, obviously, that means the soak time is not the same for every hook.

DR. TURNER: Right, and there might be ways to address that. My last question is has the size composition of the catch been compared to the size composition of the commercial catch?

DR. REICHERT: Wally or Kevin?

DR. CRAIG: No, and we looked at the size composition of the biological samples, relative to what was caught in the survey, but we haven't compared the size composition to what is caught in the commercial fishery.

DR. TURNER: Right, and so there might be some need to consider how to apply those age samples to a commercial catch, but, anyway, thank you very much.

DR. BUCKEL: Wally.

DR. BUBLEY: I will follow-up on that as well. While we didn't do that at this stage, there was a CRP project, a pilot study, that led up to this, in the year prior to, in 2019, I believe, and we were utilizing multiple hook sizes, and one of those hook sizes was more in line with what the commercial catch is. We ended up using a smaller hook size, to try to get a wider range of individuals, but we were -- So we did use gear that was a little more comparable to the industry in that pilot study, prior to going forward with this.

DR. TURNER: Thank you.

DR. BUCKEL: All right. Next up is Jennifer.

DR. SWEENEY-TOOKES: Thank you. This is really interesting, and exciting, and, as one of the social scientists in the room, I love that you based this on this cooperative effort, and particularly letting the captains choose some of the locations where you started, and I feel like they would give you a gold star then, because, in many ways, the findings will feel much more valid to people who are on the water, just by starting in that way, but I wonder if you could talk a little bit more about how you recruited these folks, where did you find them, how did you identify them, and what made them be good collaborators with you, and then, to end with that, did that model work? Is this something that could be used as a model in other projects, to do this sort of cooperative work?

DR. CRAIG: I can take a stab at that and let others chime-in. I mean, this is done via a bid process, and so, you know, the -- You know, there's an advertisement that goes out, and potential industry participants respond to that, and they make a bid to sample in a particular region, and then there's a process to determine who gets those stations, but, in effect, we've had the same fishermen over the course of the survey. We had two industry participants in the first year, and then we had those two, plus an additional two, in the subsequent three years, and so it's been pretty consistent, in that sense, in that we've had the same industry participants sampling in the same regions over the course of the survey.

The terms of how it works, I think -- I mean, it's my sort of opinion that we communicate closely with the fishermen, and Wally does a lot of that, and Blake, in particular, does a lot of that. We have a lot of feedback on the water about how things are going, and we instituted this annual meeting to get some direct facetime with the fishermen, that we did in Charleston last year, and so, you know, from what I can tell, in my involvement over the last year, I mean, they're kind of all-in, and it works for them.

It does jibe nicely with their normal activities, and so they're typically fishing for tilefish prior to when the survey starts, and so it's a nice sort of supplement for them, but all indications are that they're happy with it, and it certainly facilitates some sense of ownership in the data and in the management process.

DR. BUBLEY: I will follow-up a little. So, initially, we did do some canvassing. Some of the stipulations that we were looking for were fishers that were, obviously, familiar with the gear, and so they had to be set up. We weren't providing any of the gear for them, and so, if they wanted to participate, they were going to have to foot the bill for it, and so we were looking for people who were in the longline fishery as well as people who -- Potentially who have done some work with scientists as well. It makes that portion a little easier to communicate some of these, and it's not always ideal, but we got through this, and I think, as Kevin said, I think everyone seems to be very pleased with the way this is going and the fact that they have some input into what's going on with this, and so they're really good advocates too for this, moving forward, because they get to take part in the process, and so they see how it is, and it's not behind a curtain anywhere.

DR. BUCKEL: Thanks, Kevin and Wally. Jason is up next.

MR. WALSH: I think you kind of answered this, but I was curious if there was any pushback from eliminating the captain's choice option and just going to random -- Like in terms of buy-in or participation of fishermen.

DR. BUBLEY: I will jump the gun here with Kevin and beat him to it. I mean, initially, that's always an issue that we've faced, when trying to explain kind of survey design with fishers, is that they don't understand why we're not going where the fish are, and we're going to where hopefully the habitat is, and that will give us a better understanding, and we've had hours of discussion with the fishermen, to kind of go through this process, and, just as they seem they're getting it, then, all of a sudden, something comes out, but I think they're getting a pretty general understanding of it. They don't like to go out there and not catch anything. It's against everything that they've ever done, and so we have to kind of calm them down a little bit when they're going through and they get a couple of low rounds of catches, but I think they understanding that there are ways to account for that, and we've tried to explain it as much as possible, where, because we're taking temperature, because we're looking at latitude and depth and things like that, that we can correct for this.

If we're sending them to an area that they're not expecting to catch fish, due to one of those factors, and they don't catch any fish, it's okay, and that's the process, and it was -- I think it was a little difficult, the first one, when we went to the full random, but I think they have grown to understand over the last couple of years.

DR. CRAIG: I mean, I would echo what Wally said. Also, it does, you know, from just a strict economic standpoint, it makes their effort more efficient, because, you know, they do sample sites that have low catches, or, in some cases, no catches, which decreases, you know, their time on the water, and it increases the number of sites they can do in a day.

DR. BUCKEL: Jason, did you have a follow-up? Go ahead.

MR. WALSH: Yes, and I guess the real question was just did participation -- Did people stop participating at all, I guess was my question.

DR. BUBLEY: No, and so, as Kevin mentioned, I believe, we've had the same fishermen throughout the course of this, and, in fact, I've had fishermen reach out to me over the last couple of months about wanting to participate in future events, and so it sounds like they might not know about the random selection, and they might regret it when they start pulling up empty hooks occasionally, but it hasn't seemed to affect it, in terms of that sense.

DR. BUCKEL: Jennifer, to that point?

DR. SWEENEY-TOOKES: I wanted to ask a follow-up. You mentioned that you were measuring the captain's choice and comparing it to the random sampling that you were setting out, and that they were roughly equivalent, and did you take that data back to them and show them?

DR. BUBLEY: We did. That was before we made the decision to move fully towards this, and that was one thing that we showed, was saying, look, this is -- For the majority of these species, there doesn't appear to be any reasonable difference between them, and so they have moved forward, and some of the things -- What Kevin was showing was proportion positive, and, a lot of times, that's utilized for this, and so, in effect, sometimes they would be catching fish, but they

wouldn't be catching quite as many fish as they normally did, and so there's still a little bit of pushback, but, at least in terms of constant catch, that is still occurring.

DR. BUCKEL: Marcel, to that point?

DR. REICHERT: As a follow-up, I think the working group -- Because of the regular workshops, where you involve the fishermen and explain plans, or demonstrate previous results, we also felt that that was a strength of the survey, because, again, that increases the involvement, and the ownership, of the participants.

DR. BUCKEL: All right.

DR. CRAIG: Their primary interest is that it be used, you know, and I think that offsets some of these other concerns about, you know, the sampling design. They really want to see the survey used. A number of them are involved in the management process in some way or another, as AP members or some other way, and so they've seen a lot of cases where data hasn't been used, and so I think their primary emphasis is that this be used, and so they're willing to accept some of the constraints that we've imposed related to the sampling design.

DR. BUCKEL: I've got Steve Turner next and then Alexei and Chris.

DR. TURNER: So I just want to be sure that random is not habitat-based, and it's geographically-based, and is that correct?

DR. CRAIG: That's right.

DR. TURNER: Okay. Thank you.

DR. BUCKEL: Alexei.

DR. SHAROV: I have a related question, and so clearly the fishermen are involved are knowledgeable, and the captain's choice is a good way to start, because -- Well, because they have experience, and they know where the fish are, and I wonder if there is a enough information for us, or for the survey, to learn as to which areas are a suitable habitat, or preferred habitat, and which ones are not, even though the sampling size sounds to be relatively good, but considering the overall area, and through the strata, it certainly is not efficient yet, and probably could become much more efficient, if we clearly roll this to, you know, where the target species are less likely to be encountered and focus more on areas where the higher concentrations are, or where the variance would not be as large, and then we'll get a much more precise estimate, because, right now, sixty to 180 samples, spread over how many thousand square miles, it really is asking for efficiency, and so I wonder if information is available just by simply talking to the captains, and, number two, if the records are available for the catch reports on the distribution of the fishing sites, essentially, because, obviously, they are not searching just at random, and they know where to go, and that might help in redesigning the survey. Is this sort of in line, or is it coming up soon?

DR. CRAIG: I guess, you know, Alexei, I think the challenge, or one of the main challenges, is it's a multispecies survey, and the three focal species use somewhat different habitats, and so, you know, snowy and blueline tend to be more associated with structured bottom, and tend to be more

common in the shallow-water strata. Golden tilefish tend to be deeper, and more associated with unstructured sand and mud bottom, and so I think it's kind of worth looking into, but I think, you know, one of the challenges may be trying to optimize a survey design with respect to some -- You know, some metric of habitat, when the focal species differ in their habitat use and requirements.

DR. BUCKEL: Wally.

DR. BUBLEY: That was a discussion that we had though, moving forward, is to look at ways to reallocate based on variance, just as you were mentioning, and so it's been discussed, and we can start looking at it as soon as -- After this year, or the following year, but we probably wouldn't have a chance to implement it until we have a slightly larger sample size to look at of years.

DR. REICHERT: Well, to that point, because we discussed that at the workgroup, and one of the things that we were very careful about is making potential recommendations that makes the survey go back to square one, and you want to optimize, and we had similar discussions with potential changes in gear, hook size, et cetera, and we were very cognizant of the fact that we don't want to go start a new -- Yet again start a new survey, and use the years of data that we already have, and so optimization should definitely -- We felt to keep in the back of the mind that it should not affect the survey design, et cetera, so we don't have to start over again.

DR. BUCKEL: Chris.

DR. DUMAS: Am I right in understanding that the success of the captains in finding fish in the captain's choice sites was not that different from the success of finding fish at randomly-selected sites, and is that what --

DR. BUBLEY: In terms of proportion positive, as Kevin showed, it wasn't too much of a difference. There was some differences between captains, because we were working with fishermen that had different specialties, and so some of the fishermen were typically blueline fishermen, and others were golden fishermen, and others were snowy, that kind of -- So I think, if we broke it down into their specialties, it might have slightly been better, just because they're going to known fishing spots that they were working with, but, overall, over all those species, we didn't see any noticeable difference.

DR. DUMAS: On the captain's choice sites, were the captains incentivized to actually find fish, and a large number of fish, and like did they get paid per fish that they found, or were they getting paid a flat rate per day, minus their fuel costs, is what they made on that day, because then the captain's choice sites might have been the ones that minimized their fuel costs, rather than the ones that were designed to find fish, and I don't know.

DR. BUBLEY: I mean, I don't have evidence of that. They were paid a flat rate, or a rate per site that they were sampling, and so that is definitely a possibility, but I think, with having the discussions that I had with these fishermen, is they wanted to catch fish. That was the one part that was the toughest for them, is the going to places and not catching what they normally catch.

DR. DUMAS: Fair enough. Thank you. Then another -- Going forward, when the captains are going out to sites -- You said that sometimes they're asked to go to a site, and they don't think they're going to catch any fish there, and it would be interesting to just collect data on every site

that the captains are sent to and ask the captains, do you think you're going to find fish there, yes or no, before they go, and why, like depth or weather, or have what they think the habitat there is, or they've found fish there in the past, or did not, but why, and so to try to get at more of the information that the captains have, and then maybe that could be useful in helping to maybe more quickly restratify your sampling design, make it more efficient or whatever, but that would be interesting, and to provide some incentive, so that, if they correctly guess, or if they correctly -- Not guess, but estimate, and, if they correctly estimate what they're going to find at the site, they get rewarded for that, to make sure they have incentive to not just answer the question randomly, but have an incentive to actually provide information about what they think is actually going to happen.

DR. REICHERT: I think that's a really cool idea, and maybe we should add that to the research recommendations, or survey design changes or whatnot.

DR. BUCKEL: Other questions for Kevin or Marcel? Go ahead, Jason.

MR. WALSH: Sorry, and I couldn't find it when I was trying to go back through this, but I thought I remembered seeing something about there was -- In the northern strata, there was a southern -- I don't know, but I don't think it was -- I'm trying to ask was it in the captain's choice that, within the northern strata, they picked more southern locations, or was that just, in the randomized place where they could be, they were picking the southern portion of that, or did I mis -- I might be misremembering what I was reading, but I thought there was something about that.

DR. BUBLEY: So was that included in the report, Marcel? There's a reason we went from one-latitude-band to half-latitude-band strata as we went, because the fishermen followed the rules, and they did everything they were supposed to do, but it just happened to be that the six that he was getting in one strata were in the lower portion, and so we had half of a latitude band that didn't get sampled, and so we were trying to rectify that for the future, so we had a little more spread of the stations, but, again, he did exactly what we told him to do, and it just made sense for him to sample those ones.

DR. BUCKEL: So I had a question on the few comments that have been made about making it more efficient, given the lower catch rates, and, Kevin, you mentioned that golden tilefish are found in -- I think it was definitely a different bottom type, and I think you said that tended to be deeper, whereas the snowies and bluelines were maybe more shallow, and, you know, looking at the Slide 13 from the presentation, where the golden tilefish are mainly caught off of Florida, and some off of South Carolina and then north of Hatteras, and was there any discussion about how the effort was distributed with the shallow and deep strata, to maybe have, you know, less effort in the deep strata, where it's known that there is no golden tilefish, and was there any discussion on that?

DR. REICHERT: I don't remember being that specific, and I think the discussion, and some of the other working group members may chime-in here, but it was more what methods could be used to optimize the survey, with a focus on -- Concentrating on the three focal species, and I don't think -- I don't remember discussing habitat playing a role in that, because that kind of goes against the random stratified sampling, but, for instance, reallocating -- If I remember correctly, reallocating some of the sampling was discussed as a means of optimizing, but we didn't go into a lot of detail there, because we felt that that was more something for kind of a future analyses,

once more data are available, and maybe -- Jie, did you remember more specifics on that conversation? Sorry, and I didn't mean to put you on the spot.

DR. CAO: That's fine, and I don't remember either being that specific, but I do remember we talked about how to reallocate efforts, trying to -- You know, considering all the species that were caught in the survey, as opposed to just, you know, focused on one species.

DR. BUCKEL: Alexei.

DR. SHAROV: I've got a couple more technical details, and sorry for maybe clogging -- We're like almost at five o'clock, but this is the chance to ask, and then hopefully, you know, Marcel and Kevin and Wally will keep working on the program, but I remember, in the discussion of this survey earlier, or the other survey, the size of the hook was brought into consideration, and, actually, two types of hooks were -- Three were tried, and I am curious of, in this case, or, well, what was happening, and it looks like there was just one type of a hook, and then a second part, that I forgot to ask initially, was, in terms of the orientation of the longline, whether you made an effort of positioning it along the slope of the shelf, or did it matter, and was there any -- You know, it's three miles, and that's quite substantial, but was there a gradient, and, if there was a gradient, would you just go along the same -- Along the line of the same depth or whatever else?

DR. CRAIG: I can speak to that latter point, Alexei. I mean, I think the intent is that they sample along depth contours, but the captains do have considerable discretion, because there's a really high probability of gear loss here, and, in certain regions, particularly off of Florida, there is very sort of complex bottom types, and so I think the intent is that they sample along the depth contours, but, you know, if there's some possibility that that is going to enhance the chance of gear loss, I think they do have options to modify that.

We do note the beginning and ending position of the longline, and so, you know, we could potentially quantify that orientation and look at how much it varies across the different sets, and, you know, in theory, we could account for that. Regarding the hook issues, I think, Wally, you mentioned that, and you talked about that earlier, regarding how we settled on the single 12/0 hook.

DR. BUBLEY: I will reiterate, and so we utilized a 12/0 and a 15/0 hook, I believe. When we looked at the length distributions of the catches between species, we were finding that the 12/0 hooks were catching essentially just as large fish as the 15/0 were, but they were also catching smaller fish as well, and so that was the rationale to try to -- So one point that we haven't brought up here is that there is one observer on each vessel that is taking all the data and recording everything, and so one thing that we had to be cognizant of, when they were going out, is we had to not overload them with requests to go through this process, and so we tried to simplify any spot that we could, and one of the ways, after we saw the distribution of lengths with the hooks, is we said it would be much easier just to use one size hook and eliminate that aspect, because it did -- That smaller hook size did cover essentially the whole range, and it was slightly different distribution, but at least it was covering the whole range as those larger hooks.

DR. SHAROV: Okay, and the last -- I promise the last question is, if there is a gradient, and, at this depth range, generally you would expect the eastward gradient, or the slope of the shelf continuous, and would it not made sense to actually try to, you know, drop it along the slope, because, with every set, you essentially are doing a mini experiment, where you will have one end

at the higher depth, and the other one at the lower depth, and, if you're recording sort of the position of the hooks and the number of fish that are caught, you sort of increase your information that you're collecting on the distribution relative to depth.

DR. BUBLEY: With that -- I mean, so there was a couple of issues that -- I think that was considered at some point, but, because we don't have the hooks numbered, that makes it more difficult, because, if we're putting these hooks in the water along a gradient, and we go shallow to deep, or deep to shallow, those last hooks in are also the first hooks out, and so you have the potential to be fishing different times at different depth strata, and we don't know exactly where the gear is landing either, and so, if there is a little more steep of a drop, we can't be certain where that gear actually ended up on as it was set on the bottom, and so I like the thought process, and I think it makes sense, but I think, logistically, it was difficult to do under the constraints that we had.

DR. SHAROV: All right.

DR. BUCKEL: Steve Turner.

DR. TURNER: To that point, my understanding is, at least off of Florida, or south Florida, currents are so strong that fishers probably are constrained by how they can put the gear in the water, and going cross-current, which would be up and down slope, potentially would be very difficult and could lead to the gear loss that was mentioned earlier. You know, I haven't been fishing out there, but that's my understanding of that environment and this longline fishery in that environment.

DR. BUCKEL: Wally.

DR. BUBLEY: I will say, as Steve mentioned, we have different challenges throughout this region, because it's such a big range that's being covered, and so we were trying to find the lowest common denominator for a lot of these. The fishermen up north were wondering why we had to go with three miles of longline, because one mile works just fine for them, but the fishermen in Florida were saying it was imperative that they use more longline, because they can control it better, and make sure that it gets to the bottom, and so, because of those two situations, we went with three miles, because it doesn't affect the people up north, but it could potentially affect the ones down south, and so we had to make some decisions based on weighing what would work best for the whole entire survey area and not just a specific region.

DR. BUCKEL: All right. Thanks, everyone, for the excellent questions. Judd, if you could pull up our agenda. We just reviewed the presentation and the final report, and the second -- What diagnostics are necessary for inclusion into stock assessments? That's not something we talked about with our questions, but what do folks think about including this time series, and the report suggested waiting until there's at least five years of data, and that was 2021 forward, and what other diagnostics are necessary for folks on the SSC to be comfortable for this being used in the stock assessment? Alexei.

DR. SHAROV: Well, we didn't talk about, because we didn't see, I think, actually the indices as a product, but that's essentially what we want to see. We want to see the estimates of the average catch and the corresponding precision estimates and whether the trends that we could have noted, even within the three or four-year time interval, whether they could be sort of statistically

significant, or at least have some, you know, efficient level of precision to make some inferences, right, and so I don't know if we could say, at this moment, anything about that, but it's coming, obviously.

DR. BUCKEL: Marcel.

DR. REICHERT: We talked a little bit about that, and I think two of the things that I mentioned in the report are contrast and variability in the index, and I think we mentioned that the development of the index doesn't necessarily have to wait until we have five years of data, and that it could potentially begin now, or next year, and I think Erik mentioned perhaps wait until the 2023 data are available, and potentially look at that, or starting to look at that.

DR. BUCKEL: Thanks, Marcel. Judd is typing up those thoughts, and so folks take a look at that, and, while Judd is typing, we'll go to Steve Turner.

DR. TURNER: I guess I would ask -- This is sort of an information question, rather than a bullet yet, but is sufficient information being collected to determine whether hook saturation is going on, and, if the answer is yes, then I would suggest that they look at hook saturation.

DR. REICHERT: That is currently not collected, correct, Wally or Kevin?

DR. BUBLEY: It's just based on the number of -- I mean, as much as we can, the number of fish that are caught on these hooks, and so we can explore it. It's not anything that's controlled for, and so we would have to make some assumptions, but we can look and see what the catches are, compared to the numbers of hooks, but I'm pretty sure we're not getting four-hundred-and-something-fish on these longlines.

DR. BUCKEL: Judd, I think the other thing, in that first bullet, was the variability, right, and so, if the variance is really high on all the estimates, then you can't tell. You know, there's no difference between the five years of data, or three years of data, and I think that's what Marcel was getting at with the --

DR. REICHERT: Yes, and also the contrast. If you have an index with considerable contrast, then -- Anyway, that is -- It provides information on the usefulness of the number of years that you have available.

DR. SHAROV: What do you mean under contrast? Is that interannual changes, or there is a trend, and is that what you mean under contrast?

DR. REICHERT: Yes.

DR. SHAROV: Okay.

DR. REICHERT: Because, if you have a flat line, then -- Erik, or others, can probably explain that better, but that provides less information, as an index, than when you have some contrast, and it's also depending, of course, on other inputs in the stock assessment.

DR. BUCKEL: So I know that, with the chevron trap video surveys, you guys do -- It's not just taking the nominal, right, and you try to control for any differences in bottom temperature, et cetera, and is that something that we should have here? That's pretty standard, that that's going to be --

DR. BUBLEY: Yes, and that was the intent, was to utilize any information we had available and look at covariates that might affect catch and then try to correct for that within this process.

DR. BUCKEL: Thanks, Wally. I've got Chris and then Marcel.

DR. REICHERT: Well, to that point, I think that's what I meant with developing an index. You know, you don't necessarily have to wait for five years, and you can start developing the index.

DR. BUCKEL: Go ahead, Chris.

DR. DUMAS: I think I remember, in the presentation, there is one fisherman, and one fishing vessel, assigned to each geographic region, and so, in that case, we can't really separate the fishermen, or the vessel, effect from the geographic region effect. If all the fishermen were the same, or close to the same, then that wouldn't be potentially worrying, but I think I also heard that the fishermen are different, in terms of what they specialize in, in terms of what they fish for, and so that could be -- That could be potentially a problem, if you're trying to compare geographic regions to each other, in terms of catch rates, but, looking within one geographic region over time, if you're looking at trends over time, then having just one fisherman in that one region over time -- That would be --

That shouldn't affect your ability to detect trends over time, but, if you want to compare different geographic regions, you're not going to be able to disentangle the region effect from the fishing vessel effect if the vessels are different in how they're fishing, even if they have the same gear. The captains might be targeting differently, or deploying gear differently, and I don't know, but you might have anecdotal information that says they're doing things the same way, and, in that case, it shouldn't be much of a problem.

DR. BUCKEL: Good point. Alexei.

DR. SHAROV: Theoretically yes, but I think this is the type of a fishery where the captains effect is probably minimal, right, and, I mean, because they're laying down the longline, and it's soaking, and so, unlike using drags, or trawls, and there is no speed associated, and there is no speed or incline and whatever else, and, although there could be still some minor differences, like the time that it takes for them to lay down and retrieve, but, in this case, it's probably minimal, relative to many other types of fisheries.

DR. DUMAS: That's great to hear. It makes me feel more comfortable.

DR. BUCKEL: Marcel.

DR. REICHERT: One way to potentially look at that is you guys record start and end time, and so you can compare that between fishermen, and, if there's a consistent difference, then maybe

they are fishing in a different way. If that soak time is roughly the same, then, you know, again, that may indicate that effect may not be as -- It may not be as significant or as large.

DR. BUCKEL: Steve Turner.

DR. TURNER: I'm not sure that there would not be captain effects, and so I would especially be concerned about changes in captains in the same area over time, and so I would certainly want to pay attention to that, and Alexei may be correct, but I would want to think about it.

DR. BUCKEL: All right. Thanks, everyone. Marcel.

DR. REICHERT: For Bullet 1, if the SSC agrees with the recommendations of the working group, I can provide some of the summarized language from the report to Judd, and then we don't have to discuss that point-by-point.

DR. BUCKEL: Excellent.

DR. REICHERT: So, unless people disagree with some of our recommendations, then we can change that, including the research recommendations, and we already have one additional one.

DR. BUCKEL: All right, and then the last bullet is what elements of the survey should be included in stock assessment and our management, and I would say that the age and biological information for sure, and then hopefully the catch per unit effort, and in terms of -- So start with those two, and then we can talk about if folks are comfortable with that. I mean, we're going to want to use whatever we can, I guess, that is from the survey.

DR. CURTIS: I think this question was specifically targeted at before that full five-year time series where the index is available, and what elements of the survey can be incorporated and used now.

DR. BUCKEL: Okay. Before the catch per unit effort data. Got it. Okay, and so this is non-index data, and so ag and biological information and allocation between councils, and that is -- So a reminder to folks that the Mid-Atlantic Council has a blueline tilefish fishery that they are managing, and so this survey, now that it's extending up into the north, could inform how the east coast blueline tilefish pie could be allocated, I guess, or -- Genny is nodding her head. Chip, to that point?

DR. COLLIER: Just a reminder on how the blueline tilefish ABC and ACLs are developed, and so, south of Cape Hatteras, there is a biomass model that's used for blueline tilefish. North of Cape Hatteras, there's a data-limited approach, and, with that data-limited approach, we also have to divvy up whatever the ABC or ACL or OFL from that region is among the two councils, and so could this information be used to divvy up that slice of the pie north of Cape Hatteras into a South Atlantic and/or Mid-Atlantic group, based on some of the data that's being collected through this survey?

DR. BUCKEL: It was done in the past, right, with even -- I guess there was some limited longline data, and so I would say that this would be even better than what was done in the past.

DR. COLLIER: I can't remember what was used, but the expert is here that would remember what was done.

DR. SCHMIDTKE: It was the Mid-Atlantic pilot study that was used for that, and it was the first year, the one year of information that we had at the time for that, that was used to divide that up.

DR. BUCKEL: Thank you, Mike. Steve Turner.

DR. TURNER: No, and thanks very much.

DR. BUCKEL: Alexei.

DR. SHAROV: Well, can I ask Wally and Marcel, and when the decision was made to extend it into the Mid-Atlantic waters, and, well, of course, the Mid-Atlantic Council is interested in it, but is there -- Sort of the scientific perception, at least where I'm thinking along the lines of the blueline tilefish, as being a single stock, and then, therefore, we are extending it with a look into the future that we're assessing it as a stock, and then the councils will figure out how to subdivide the ABCs.

DR. BUCKEL: Go ahead, Marcel.

DR. REICHERT: I think that was the plan, yes, unless we know that there is different stocks, and I believe that that's how this may be approached.

DR. BUCKEL: Wally.

DR. BUBLEY: One of the advantages to doing this was that we would get that baseline, potentially, data, to see if anything is changing over time, if they're moving north, or not, and another advantage of the range that we ended up doing was that it fit -- It butted up against the Mid-Atlantic and New England's golden tilefish survey, and so that survey goes down to the level that we stop, and so we don't have overlap, unfortunately, and so we don't have some of the side-by-side, but at least it does cover from Long Island, I think, all the way down through the Keys, where we potentially could have some information about these. While they are two surveys, we can at least have a grasp of almost a coastal distribution pattern.

DR. BUCKEL: Great. Then the only other -- We had age and biological information, and I would think that, if it's something that the data providers and the assessment scientists feel could be used, then it would be fair game, and I don't see any reason why not. It says "should", right, and not "must". Erik Williams.

DR. WILLIAMS: The only thing to keep in mind is, when we say "age and biological information", there is a distinction between using say age and length samples in sort of establishing an age-length relationship, versus developing age and length compositions, and the latter might benefit from more years of data, because, when developing those age or length compositions, you might want to consider some weighting, based on catch rates, or something along those lines.

DR. BUCKEL: Yes, and we won't be too prescriptive here. We'll just say if they are deemed usable, that the SSC doesn't have an issue with them being used, but, if they're not ready for primetime, then that's fine, too. All right. Are folks happy with where we are with that agenda

item? I know it's quarter after five, and we're supposed to end at five, but Julie Neer is here, and I would hate for her to have to come back tomorrow, and Agenda Item Number 10 is SEDAR 94, the Florida Hogfish Terms of Reference, Schedule, and Participants, and so it should go fairly quickly, if everyone can bear with us for a little bit longer, and so, Julie, if you could come to the table, and Judd has got your terms of reference up.

SEDAR 94: FLORIDA HOGFISH TERMS OF REFERENCE AND PARTICIPANTS

DR. NEER: Hi, and, yes, I'm Julie Neer. I'm the SEDAR Coordinator. Most of you know me, but some of you don't, and this is -- We are gearing up for the SEDAR 94 Florida hogfish assessment, which is currently slated to begin in April of next year, and it is a joint assessment. Well, it's a joint assessment, and the State of Florida is doing it, but there actually are two assessment components to this upcoming assessment. There will be two assessments. There is a West Florida Shelf stock and a Florida Keys and southeast Florida stock.

There is actually a third stock that was produced during the last assessment, but that's not being redone at this time, because there is very little information available, and there was very little information available last time, and so, when we do most of the Florida species, they're run by FWC, who takes the lead for us in producing the assessments, and we usually work in conjunction with the Gulf Council to do these assessments, and so there's going to be two, and so it's not as lengthy as normal.

However, we're moving forward as if there's exchange in potentially some of our decisions that might be made, and so, that said, we have developed a set of terms of reference, through a planning team process, which included both staff from the Gulf of Mexico Council and the South Atlantic Council and SSC representation from each group, as well as FWC, and that planning team has produced these draft terms of reference for your consideration and comment. They have already been to the Gulf SSC, who has made changes that they deemed necessary, and they've been incorporated in the version that you have here, and so, at this point, we're asking for the SSC to review the terms of reference, as provided, and make any suggestions, or recommendation.

As these have already gone through the Gulf Council, the goal would be for you to add and not take away, because there might be something that's not necessarily relevant to the South Atlantic, but it might be something that the Gulf feels passionate about, and that's why it's in there, and so just kind of keep that in mind as you review them, and I don't know, Judd, how you want to -- You guys have had them in your briefing book, and I don't think you necessarily need me to read them, but, if you want me to, I can.

DR. BUCKEL: No, and that's not necessarily, Julie.

DR. NEER: Thank you.

DR. BUCKEL: Thank you for the offer though, and folks can take a look here, and, if you have any edits, speak now.

DR. REICHERT: This may be nitpicking, but these are the terms of reference for each of those two stocks., and I don't believe there will be, but there -- You know, there is the potential for

different terms of reference, if you're talking about two different stocks, and so that may be just one very minor, that they are for each of these two stocks, but, other than that, I have no additions.

DR. NEER: There are some components that mention one specific stock over the other, depending on information that we already know are different between the two. A lot of them are quite similar, like you said. If there's something that is missing for the South Atlantic component, that you would like added, please share with us now. They're fairly standard. We have the mutton snapper assessment underway right now, and these were modeled off of that, with just minor tweaks to go with hogfish and not mutton.

DR. BUCKEL: Alexei.

DR. SHAROV: Sorry, and it's the end of the day, and I might be too picky, and I understand -- On the second reading, I understand what is meant under "recommend discard mortality rate", and I would recommend a zero, but, as this is a standard formulation, could we just say, you know, it's clearly -- The charge is to review the available estimates of the discard mortality rate and then come up with, you know, a certain conclusion as to what is likely to be -- Well, again, maybe it's just a perception, and could this be just replaced with the "identify the best estimate of discard mortality rate", and, I mean, do you see the difference, rather than "recommending"? I don't know, and, if you disagree, if you think that this is standard, and everybody reads it the way it's supposed to be, then forget it, but --

DR. BUCKEL: Wally.

DR. BUBLEY: Would you have less heartache if it was "characterize", or something along those lines, instead of what you said, the "recommend"?

DR. BUCKEL: I think that's a great edit. Thank you, both. Steve Turner.

DR. TURNER: In Item 6, recreational catch statistics, I see, under the first bullet, discuss Andrews 2022 investigation into telescoping error in MRIP-FES, and I'm wondering if that -- You know, how necessary is that at that time, and the best available information will not include corrections for telescoping errors.

DR. BUCKEL: I think that's how -- You know, our discussion yesterday, and it seems like three days ago, and that was our discussion yesterday on the MRIP-FES was that we were -- The language we have in our earlier part of the report is that we're going to stay with the MRIP time series that we're getting and not make any -- So I see where you're coming from, Steve, but that's what we were told, in terms of when the calibrations would be done, and that's going to happen after this process. Kai. Kai is going to pass. Julie, you know, maybe the Gulf, on the west Florida, and this is --

DR. NEER: Well, there is a potential that -- What's currently being done right now, with regard to mutton, is we're waiting on some new information, and it's possible that SRFS will replace -- The Florida SRFS and not the video SERFS, but that it will replace MRIP, but we don't have those calibrations. We'll have some information, with regard to mutton, in April of next year, and this doesn't start until mid-summer, currently, of next year, and so, if in fact we're able to make those conversions, and they're acceptable, going back in time, we could replace SRFS in mutton, and

we may be able to replace SRFS -- Replace MRIP with SRFS in this assessment as well, which is why it says "explore" and "look at", in trying to leave it flexible, depending on what is available when we get to that data stage.

DR. TURNER: But this doesn't say anything about SRFS. This talks about CHTS and FES, and what we heard yesterday, from Richard Cody, is things won't be available until 2026, and so I'm not quite sure, and maybe something needs to be corrected in this language, or I'm missing something.

DR. BUCKEL: The second sub-bullet has explore the State Reef Fish Survey, and so that's what Julie was talking about, but, yes, the first bullet -- To your original point, we have it, and that's still up for -- Does the SSC feel like we want to strike that sub-sub-bullet of discuss the Andrews investigation? We've discussed it here, and provided language, and so I don't see a reason for this TOR. Amy and then Chip.

DR. SCHUELLER: I think we can strike both explore the transition and discuss the Andrews. I mean, based on what we said in this report, or based on what we said yesterday, and I agree that I feels like three days ago, but, based on what we said yesterday, this doesn't seem to apply. Now, is the Gulf SSC also discussing this like this week? They're not?

DR. NEER: The Gulf SSC has already had this FES discussion, at their meeting two or three weeks ago, and the council is meeting this week. They have a differing opinion, slightly, and, I mean, not -- They're going forward with everything, the same way, but this explore the CHTS to FES is standard language for all of the Gulf assessments, which is why it's in there. If you wish to say we don't need to do it for the Gulf part, or the South Atlantic part, I guess you could. Striking it would require me to go back to the Gulf SSC and ask them, and I can do that if I need to.

DR. BUCKEL: Chip, to that point, and then Kai.

DR. COLLIER: This is one of the struggles that we have with some of these species where we have kind of joint management, where it's both SSCs are commenting on the terms of reference, and it's rarely that we would ever do this in a joint forum, but, yes, this language -- They quite often want this MRIP-CHTS to FES transition, and they talk about it, both at the SSC level and at the council level, and the other part is discussing the investigation, and I think it's very important to discuss it, and, if the workgroup, the data workgroup, says to ignore it, that's fine, but it still needs to be discussed. I mean, it can't be ignored. There's been multiple presentations given by MRIP in regard to this survey, and there's differences of opinion, but you can't ignore the fact that it's been presented, and it's been talked about, and potentially has an effect, and we don't know what it is.

DR. LORENZEN: The same point, and, I think, you know, you let the genie out of the bottle, and you can't put it back. We have to deal with it, and we can't pretend that this didn't happen for three years or so.

DR. BUCKEL: Steve Turner.

DR. TURNER: Thank you. I will pass.

DR. BUCKEL: Amy, did you have a --

DR. SCHUELLER: That's fine. I'm just -- Yes, that's fine, and is there a reason they want the CHTS to FES comparison every single time still? I'm a bit like -- I am curious as to like why, I guess.

DR. BUCKEL: Chip is going to tell us why.

DR. COLLIER: Well, and Kai can correct me if I'm wrong, but sometimes they use it in some of the allocation decisions, and so, when you're changing from CHTS to FES, you're getting, quite often, a much higher increase in the recreational catch, and, if the stock has increased in that time, then it becomes very difficult to know who gets credit for all those moving parts, and so looking at the CHTS to the FES kind of provides some grounding information on whether or not it was just based on the survey, or the population is changing, and so it does provide them some guidance on how to develop some of the allocation, but Kai might be able to --

DR. LORENZEN: I have no more specific information, but it is part of their process all the time.

DR. BUCKEL: Okay. Good discussion, and it sounds like we're going to keep things as they are.

DR. NEER: Any comments, or questions, additional for the data portion? If not, we can look at assessment, and let me know if there's anything there. I guess the one specific part that's slightly different under the assessment is under 10, which has some information which references your catch level projection recommendations for that stock assessment portion, since the SSC has weighed-in on that, and I wanted to make sure that that gets captured and that feedback looked at, and so that was one of the specific things for the Florida Keys/east coast stock.

Then produce the report, and then the review is pretty much the standard terms of reference that we do for basically every assessment that comes through anything for a review workshop. There will be a review workshop, and it is a benchmark process, and so there will be an in-person review workshop, which some of you will participate in, which we'll get to next.

DR. BUCKEL: All right. Thanks, Julie. Fred Serchuk.

DR. SERCHUK: I just want to compliment Julie, and these are really, really well done, and they really take advantage of all the things that you might want to look at, in terms of both data workshop and the assessment workshop and the review workshop, and so I tip my hat to you for a job really well done. Thank you.

DR. NEER: Thanks to Dustin and the planning team. I only take notes.

DR. BUCKEL: Amy.

DR. SCHUELLER: I guess I was hoping for maybe some comments on the assessment Terms of Reference 2, the second bullet point, and so, I mean, this seems to give a bit of flexibility in whether or not a continuity run would be put together, and I guess my question is like, in reality, are we expecting that, because it's been a really long time since this assessment was done, and I'm just -

- It's hard for me to recollect what like the configuration was, and I'm just wondering if this is doable at all.

MR. ADDIS: We've done it for -- We did the same thing for yellowtail snapper, and hogfish -- I think the terminal year was 2012, and it was done in SS, in an earlier version, 3.2.4. but I think we can do it. We've had several conversations about it internally, and I think we can accomplish this.

DR. NEER: If you might recall, they did pretty extensive what they call bridging exercises for yellowtail, to get from the previous configuration to move this forward, and I know they're already asking me questions about stuff.

DR. BUCKEL: Chip.

DR. COLLIER: I am getting confused on if it was mutton terms of reference or hogfish terms of reference, but I believe that Chris Swanson, with FWC, had indicated he's already done the conversion from the previous to this one, and so he has used the SS update, and it's able to take those and do a continuity run, going back in time, and so he's been working on it quite a bit, and he said this was a possibility to do.

DR. BUCKEL: That's great. Other comments on the assessment workshop terms of reference? All right. Seeing none, Julie, you're --

DR. NEER: The review is fairly standard, that we do for pretty much every assessment that's run through SEDAR with regard to when SEDAR has a workshop, and, as I said, there will be a peer review in-person workshop, with CIE participation and SSC participation, for this process. Again, this looks at trying to get feedback on what information is available in the assessment to help back-up the conclusions that come out of it, and it's not a thumbs-up or thumbs-down that you're good or you suck, and it's kind of a way to try to get information, so you can guys can have as much feedback as possible for when it comes to you for making your management recommendations. I am open to modifications, or additions, if need be. This is the most standard component of anything we do, and we have not had to change them significantly in quite some time.

DR. BUCKEL: Okay. Are folks -- Fred.

DR. SCHARF: Julie, does a benchmark necessarily involve CIE reviewers?

DR. NEER: Yes, and so benchmarks have been re-introduced back into the process, and that is one of the components of the benchmark, and it was actually just reiterated by the SEDAR Steering Committee, earlier this month when they met, that, if something rises to the level of actually needing a benchmark in this process, that we should have an independent peer review as part of that component, because, if there was enough changes, or concerns, to bring it to that level, and not just be doing an operational with an SSC review, it should probably have a benchmark, have an independent CIE process, as part of the -- A workshop as part of the process. I am not hearing any requests to add anything, and I'm seeing thumbs-up across the table.

DR. BUCKEL: Yes. Thumbs-up, Julie, and so participants.

DR. NEER: Participants. All right, and so, super quick, as I said, the current plan is to have this assessment begin, with some data scoping, in April of next year, and a workshop in July of next year, and a review workshop held in the fall of 2020, with a series of assessment workshops between October and June of -- Starting in 2024 through 2025, and a review workshop in the fall of 2025. I know that's kind of far out, but the April one is the data portion, and that's the first thing.

Now, all of that said, there's another topic on your agenda for tomorrow about yellowtail snapper. If in fact yellowtail snapper is going to get rejiggered yet again, the hogfish assessment might get delayed in starting, because, if we have to fit yellowtail in before hogfish, and it's some of the same people working on it, that might be an issue, but we would like to move forward, from a SEDAR perspective, to identify participants now, and, if things change, and then you become available for whatever component, because of the new timing, we'll reach back out and double-check, and so, basically, I'm requesting if anyone would like to volunteer for the data portion of the process, which, as I said, starts with data scoping in April, and with a workshop scheduled for late July or early August, currently.

The assessment webinar is next fall through summer, and then the review workshop will be held in late 2025. The Gulf Council will be providing the SSC chair for the review workshop for hogfish, because the South Atlantic will be providing it for mutton, and we switch-off between those two of who provides the chair, and it's Luiz Barbieri, in case anybody wants to know, and that's who is going to chair the hogfish review workshop, and so we're open for names for Judd to take a list of who might be interested in for data first, because we are going to take this to the council for appointment in December, and so we're talking about data, at least, is starting April through say August of next year, would be the data component, but that's the workshops.

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

DR. NEER: The data workshop is in-person, and the assessments will be webinars, and the review workshop is in-person in St. Pete. St. Pete is the plan, for both workshops. We'll take three, maybe, or, for review, we need two SSC members, will be ideal, and, for data, three to five SSC members, and the council will make the ultimate appointments, but, if anyone is interested, step up. Dustin will be there.

DR. BUCKEL: Go ahead, Marcel.

DR. REICHERT: Dustin, I assume you will be wearing multiple hats there then?

MR. ADDIS: Yes, as usual.

DR. NEER: He might actually be an analyst though.

DR. REICHERT: That's my question exactly.

DR. NEER: So I wouldn't count him.

DR. REICHERT: Okay. That's exactly my question.

MR. ADDIS: I think I will be involved in the analytic side, yes.

DR. BUCKEL: Look at all the hands going up. Judd has a good point that, the sooner you volunteer, the sooner you can leave.

DR. TURNER: I will do it.

DR. BUCKEL: Which one? The data workshop, Steve?

DR. TURNER: Yes.

DR. BUCKEL: Great. Thank you. Marcel.

DR. REICHERT: (Dr. Reichert's comment is not audible on the recording.)

DR. BUCKEL: For data, Marcel.

DR. CURTIS: Okay. Any other takers for the data workshop? How about assessment?

DR. BUCKEL: Those are webinars. You don't have to travel.

DR. NEER: The assessment webinars are currently scheduled between October of 2024 and June of 2025, but there's like -- I think we had four or five of them on the schedule, and it's not like a lot. Genny will sign-up. I believe there were five total on the current schedule. We will have Gulf SSC representation on each one of these stages as well, but, if you're not there -- You know, if you snooze, you lose, and the Gulf will run the show.

DR. BUCKEL: The review workshop in sunny St. Pete with Luiz?

DR. LORENZEN: I volunteer.

DR. BUCKEL: Kai, sold.

DR. LORENZEN: It's that old-fashioned --

DR. BUCKEL: Alexei.

DR. SHAROV: (Dr. Sharov's comment is not audible on the recording.)

DR. BUCKEL: All right. Fall in St. Pete. I don't know if it was Luiz or St. Pete.

DR. NESSLAGE: I am not going to be the only person on the assessment workshop from the South Atlantic, am I? How many are already signed-up from the Gulf?

DR. NEER: I can tell you who is signed-up for the Gulf already, because I just drafted the participants list. The Gulf already -- Dustin will be there for sure, but there's a couple already, I think, and let me just look really quickly at the hogfish participants. Gulf participants, currently, from the Gulf, I have Josh Kilborn, Steven Scyphers, and David Griffith for data from the SSC,

and I have Steve Saul and Luiz Barbieri for the assessment process, and then, for the review workshop process for the Gulf, I have Mike Allen and Roy Crabtree as the reviewers, and Luiz is the chair, and so there you go. Now you know who you get to play with.

DR. TURNER: Do you want me on the assessment as well?

DR. NEER: If you want, we'll take you.

DR. TURNER: I will do it.

DR. NEER: It's usually a half-day on Monday, then Tuesday, Wednesday, Thursday, and a half-day Friday, usually, but, if people can't -- You know, we'll take you when you can come, if that happens, and that happens all the time, and, like I said, this is the current week, but it might change, depending on how things go.

DR. SCHARF: I will think about that, for the data workshop.

DR. NEER: All right. Well, thank you all very much, and that's all we have for now, and we'll let you know if things change with regard to timing and such, as we discuss other pieces, your feedback, and the council will be giving feedback in December as well. Thank you very much.

DR. BUCKEL: Thank you, Julie. Thanks, everyone, for staying later. It's much appreciated, but we'll be in good shape to get finished up before lunchtime tomorrow, and so thanks, everyone. We're adjourned for the day, and we'll see you tomorrow at 8:30 a.m.

(Whereupon, the meeting recessed on October 25, 2023.)

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OCTOBER 26, 2023

THURSDAY 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 in Charleston, South Carolina on October 26, 2023, and was called to order by Dr. Jeff Buckel.

DR. BUCKEL: All right. It's 8:30. Let's get started, SSC. Welcome back to the South Atlantic Fishery Management Council's Scientific and Statistical Committee October 2023 meeting, and we last left off with the TORs for Florida hogfish, and we got participants.

Thanks, everyone, for volunteering, and the next agenda item is Number 11, the yellowtail snapper OFL and ABC considerations, and I will point you to Attachment 11a. There's a council memo to reconsider yellowtail snapper OFL and ABC, and Judd and Chip are going to talk to us about that.

YELLOWTAIL SNAPPER OFL/ABC CONSIDERATIONS

DR. CURTIS: All right. Thanks, and so this topic -- There's been a few moving parts since Dr. Belcher drafted that council memo that is in your briefing book right now, and so, initially, the letter, or the memo, had requested that the SSC reconsider their OFL and ABC recommendations for yellowtail snapper, which was determined, at a joint meeting last August, or September, of 2022, and the rationale for this, as was stated in the letter, is that, you know, because of the recent findings with the MRIP-FES pilot survey results, showing that increased uncertainty in catch and effort data, and as well as the integration of the Florida State Reef Fish Survey, which, at the end of this year, we'll have three full years of data, and that can serve as another recreational data stream.

The plan was to integrate that survey for recreational catch and effort, as well as potential calibrations with the MRIP-FES, to increase any kind of precision, and so the action item for the SSC at this point has somewhat changed.

We're not requesting you to reconsider the OFL and the ABC at this time, and kind of a stay-tuned approach at this point, until Florida kind of gets the yellowtail snapper assessment back on it schedule with integrating those two different recreational data streams, and then it will be produced. The assessment will be produced and sent to the SSC at a later date, sometime probably -- They're looking to start on it next year, with review potentially next fall, or after that, and so that's kind of where we are with this agenda item.

This would likely need to be another joint review with the Gulf, because it's a shared stock, a jointly-managed stock, and so we'll have to figure out, timing-wise, what is good for both the Gulf and the South Atlantic for that joint review, and I think Chip is going to provide some extra detail on some other aspects.

DR. COLLIER: Yes, and so what the Gulf is considering this week, at their council meeting, is to move this amendment into like, I think, what they're calling a Tier 3, and, basically, they're going to look at it again next summer at some point, and a lot of this is not necessarily -- It's driven by the pilot study that found the difference between -- Or found the potential bias in MRIP effort, but it also kind of made FWC look at the SRFS, the State Reef Fish Survey, and to see what was going on and how beneficial it would be for mutton snapper.

They already have a way to calibrate this for gag grouper, because it's been going on longer on the Gulf side, and, Dustin, you can correct me if I'm wrong on any of this stuff, but it's been going on, on the Gulf side, for quite a bit longer, and they're using it in stock assessments in the Gulf. It was used for gag grouper, and so what they're proposing to do is use that exact same method that was developed for gag grouper and apply it to the State Reef Fish Survey, which I believe it was in 2021 is when the State Reef Fish Survey was expanded to the Atlantic side, and so this will allow them to have three years of data.

They have a method to calibrate it, and the percent error for the State Reef Fish Survey is lower than what is observed in the MRIP, and it's felt like it's a potential better source of recreational data for Florida, and that's one of the reasons why they're going forward with it, another one now, with the potential basis in the MRIP effort estimates, is the State Reef Fish Survey has not been

identified to have a potential bias, whereas MRIP is, and so there's another reason why to go with the State Reef Fish Survey.

With all those things coming in line for yellowtail, there's a lot of concern with where it could -- Where the numbers would be going, with potentially the survey coming out as soon as we set catch level recommendations. Another thing to remember, for yellowtail grouper, is there's another set of allocation that comes out of this, and recreational effort differs between recreational -- Or between the Gulf side and the South Atlantic side, and so we start off by allocating the stock between the two council regions, and then, in the South Atlantic, we then allocate again to recreational and commercial, and so these point estimates of catch levels are very important when managing yellowtail in the South Atlantic region.

DR. BUCKEL: All right. Any questions for Judd or Chip? So it says, under our action, no action needed, but that's -- I guess that's one way we could move forward, but it also says that we're asked to reconsider, right, and do you want input from the SSC?

DR. CURTIS: The memo had initially requested that they reconsider, but, with all the moving parts right now, that's no longer the case, and so, right now, we're kind of in a holding pattern, where we don't need a recommendation from the SSC to reconsider those values at this point.

DR. BUCKEL: Okay. Just to -- If you could remind us, Chip or Judd, but this is one that has not been hitting the ABC, and so not taking any immediate action -- It's not overfished, and it's not overfishing, and the ABCs aren't being hit, and the ACLs aren't being hit.

DR. CURTIS: Correct. It's not overfished and not overfishing. Based on MRFSS data, they're not getting to their ACLs. When you compare recent catch with FES, compared to the recent stock assessment, it is getting close, but it's not exceeding.

DR. BUCKEL: Okay. Go ahead, Steve.

DR. TURNER: So it seems, to me, that this conundrum is violating the policy we talked about yesterday of best scientific information available at the time the data is drawn.

DR. BUCKEL: Chip.

DR. COLLIER: Yes, and so this is a little bit different than how it was talked about yesterday. Yesterday, there was no other survey that was available. MRIP is the only one available. This one does have another survey available that has not been identified to have potential bias in it, and so, to me, that is the difference. There is still some question of whether or not the bias exists, and you're absolutely right, but there is another survey that has better precision estimates, more designed for Florida stocks, and it covers the area pretty well, and so, to me, this is a little bit of a different situation, and it has the ability to be calibrated back, looking at gag grouper, and then also in the data workshop for mutton snapper, and there was also some consideration there.

DR. BUCKEL: Kai.

DR. LORENZEN: You know, I think I understand the reasoning, and I think it's good that we don't have to make a decision on it today, on the reconsideration, and I think my fundamental

concern is the sort of precedent, because, to me, it seems that -- I mean, all the correct information was considered during the assessment, and, you know, all of that was done by the book, and so here we are three years later, and we're saying, well, now we actually have information that we think is better, and it would be more convenient for us if we could just pull that ABC and start again and update the -- Not completely start again, but sort of update the assessment with that, and, you know, even though --

You know, I understand all the context of it, and I don't feel very comfortable going down that road, because, to me, it seems like this could be applied to many other situations as well, and so, actually, we would be better off if canned this and do it with a different survey, because, partly, it seems to me that a major driving factor here is the aggravation of having to do, and redo, the allocation, and, I mean, that is often the case, right, and, I mean, is that something that should guide is in, you know, those decisions, and I don't know, and I'm just not entirely comfortable.

DR. BUCKEL: Steve Turner and then Fred Scharf.

DR. TURNER: Thank you. I will pass.

DR. BUCKEL: Okay. Fred.

DR. SCHARF: So, Chip, can you just talk a little bit more about this State Reef Fish Survey in Florida, in terms of -- You know, it's not something that we've used here in the Atlantic, have we, or we have? But it's been used in the Gulf, and do you know -- When did the survey start, and how -- You know, has it been evaluated for bias, right, compared to what's been just done in the FES? I'm just -- You know, again, I don't want us to say that we're just going to wait, and this is going to be ready in a year, and then, a year from now, we're like, well, wait a second, and how do we know this survey is really better than that one?

DR. COLLIER: I don't know that much about the Reef Fish Survey and when it started on the Gulf side, and, Dustin, do you know more about it? I know it's gone through a review through the MRIP process, and so it has been certified. The methods for calibration have gone through peer review for gag grouper, and so those are good. I just don't know if it has been investigated for bias, similar to the MRIP survey, but Dustin.

MR. ADDIS: Bev Sauls -- She is the expert on SRFS, and everything you said was correct, and it has a -- Just like MRIP, it has a dockside interview portion, and it also has a mail-in survey, and so it's very much like MRIP in that way, but a more detailed sort of explanation could be provided by Bev, and I don't know all the details.

DR. BUCKEL: Marcel.

DR. REICHERT: Since I think, in the future, we'll probably be talking more and more about that survey, it may be good to potentially get a presentation, so we can get a good feel for it, like we did with SADL, saying, okay, we now know what it is, and we feel comfortable using it, if that comes up in the future, and is that a reasonable request?

DR. BUCKEL: Chip.

DR. COLLIER: It's funny that you would say that, and we just had a presentation by Bev on the SRFS survey through our seminar series, and so we do have a recording of it, and it is somewhat long, about forty-five minutes, but it does go into all the details, and it goes into some of the comparisons between MRIP and what they're finding through their survey.

DR. BUCKEL: Chip, those are served-up on the council website?

DR. COLLIER: Yes, and it's under Meetings, under Seminar Series.

DR. BUCKEL: Awesome, and so, if you're interested in more details on the SRFS, and not the SERFS, survey, check that out, and so we've got two surveys, and so we're going to have to careful using that, and we'll have to qualify it. Alexei.

DR. SHAROV: Did I hear correctly that it was expanded onto the Atlantic only in 2021?

DR. COLLIER: So it started off as GRFS, and so the Gulf Reef Fish Survey, in Florida, and then it was expanded, in 2021, to include the Atlantic region, and that's when they changed the name from GRFS to SRFS, and so it became the State Reef Fish Survey.

DR. SHAROV: So, for the Atlantic side, we will have, or the analysts will have, two years of data in the recreational removals on the Atlantic side? Okay. In lieu of our discussion of the FES pilot survey results, and the decision that, or our recommendation to the council, it certainly feels good that -- Well, at least the consideration of the additional assessment rerun is being postponed, right, and so we're being told that the plan was to request that we reconsider this, but now we just are going to wait, right, until Florida just runs through it on its own, and, quite honestly, I understand the driving force behind it, primarily excitement, or concern, over the FES potential bias, but, again, as I said, given our discussion of FES, that this is a pilot survey, that the better results, and the better understanding, may come back to us no earlier than probably 2025, and it just doesn't make sense to -- Thank you.

DR. BUCKEL: Chip and then Kai and then Fred Serchuk.

DR. COLLIER: To that point, one of the things that came up during the mutton data workshop was this FES potential bias, and, when they investigated the difference between the State Reef Fish Survey for mutton snapper and MRIP data, it also came up with about that 40 percent difference in landings, and so that's -- Going beyond the potential bias, that is another source of information showing that there is potential bias in the MRIP estimate. This information doesn't necessarily need to hold off until 2026 to be available. They're going to have three years of data at the end of 2023, and then able to do a calibration shortly there afterward, with methods that are going to be established through the mutton snapper data workshop, and so it's very different than what we're dealing with when we don't have the State Reef Fish Survey data available, and this is another source of information that has been certified to develop estimates of recreational catch.

DR. BUCKEL: But I hear what Alexei is saying, that we need to be clear here that the reason -- Because, above, we said that we want to keep moving forward, and we don't want to delay things in waiting for the FES calibration, and so, here, we need to be clear that we're willing to have a delay, because there's a State Reef Fish -- This is a Florida fishery, and there is a State Reef Fish

Survey, or that's a strawman that we can -- If folks agree with that, we'll leave it, and, if not, we can discuss more. Kai and then Fred Serchuk.

DR. LORENZEN: I think my concern here is not about delaying. It's about sort of rescinding things that we've already finished. I mean, this is -- I was in the review workshop for that assessment in 2020, and, after that, the world changed, with COVID and everything, and so it's been quite a long time ago, and now we're saying -- Now we're taking back those ABC values, on the basis of information that didn't even exist when the -- So I have conceptual problem with that, but I think it's a good survey.

I mean, I've known the survey for a while, both the Gulf and on the Atlantic side, and so I think it makes sense, possibly, potentially, to use that survey for assessments for Florida-centric, or Florida-only, species, of which we have quite a few, and so I'm not at all against that, in principle, but I'm just sort of concerned about, you know, this assessment and the ABC that we arrived at, and, I guess, my question is what should be the bar for doing that.

Is it okay to do that just because it's more convenient, or, you know, should we have a more stringent bar, but I think the other thing that I think this shows is, again, that, you know, that MRIP bias correction genie really is out of the bottle. I mean, people are using that information to make all manner of decisions, and we should support those, by better explanation and exploration of what the implications are of, you know, that potential bias, and potential correction, and to guide us through the next few years, because, otherwise, I think we're facing some fairly chaotic conditions.

DR. BUCKEL: Thanks, Kai, and the memo from Carolyn has some language from NS 2 Guidelines of, between the initial drafting of an FMP and its submission for final review, new information often becomes available, and this new information should be incorporated into the final FMP, where practicable. Chris. Fred Serchuk first, and then Chris. Go ahead, Fred Serchuk.

DR. SERCHUK: The memo in front of us also talks about that the Gulf Council will make the same request that we're being asked to look at of their SSC, and do we know whether that has happened yet? It would be unfortunate if the two SSCs provided different responses, quite frankly, and then you would have to basically say there's a significant difference in how the SSCs look at it, and has the SSC met for the Gulf Council, and acted on this, or is that planned? It will cause confusion if the SSCs differ, I think, in terms of whether to proceed differently, and do we have any information on that? Thank you.

DR. BUCKEL: Chip, to that point?

DR. COLLIER: This is where we came up with the problem, as we talked with the other council, and this is where the problem was identified. The Gulf Council is very uncomfortable taking this back to their SSC, and so it's not going to go back to their SSC. Prior to those discussions happening, we had to have our briefing book developed for this meeting, and so we had already included the letter in there that talked about rescinding, or modifying, this ABC level, and so we're not asking the SSC to rescind their ABC recommendations.

What we're doing is we're telling you it's going to be a long, drawn-out process for this amendment, and, probably during the process for this amendment, we are going to be requesting

FWC to update the yellowtail snapper assessment with the State Reef Fish values, and that is going to be coming to you during the development of this amendment, and so the ABC values might -- We might be requesting you to look at which values do you think are most appropriate to be using to set catch level recommendations, and we're just trying to be open and honest about what the plan forward is, and, you know, this was a very fluid thing. As these FES numbers came out, there was a lot of concern with it, and there was a potential solution coming forward, using the State Reef Fish Survey, as opposed to doing anything else.

DR. BUCKEL: Thanks, Chip. Chris.

DR. DUMAS: Do you all happen to know what method they're using to combine the Florida survey data with the MRIP data? Do you happen to know? Are they using multiframe methods, or some other method, and do you know?

DR. BUCKEL: Dustin, do you want to take that one?

MR. ADDIS: I don't know.

DR. BUCKEL: Amy.

DR. SCHUELLER: Can we please delete the last bullet? I don't think that we need to make any statement. It's like the council is saying this thing might come sometime in your future, and great. I will say, when it comes, I hope that it's scientifically defensible. I hope that whatever is presented is done well enough that it's more straightforward for us to make a decision than, for example, what was presented earlier in the week related to MRIP, where there is so many uncertainties, and it's a pilot study, and there's a lot of work to be done yet, and so, I mean, if this is going to move forward, and going to come back to us, I hope that it's tied up in a nice, pretty package and not sort of halfway there, because I think that will be a recipe for disaster.

DR. BUCKEL: Thanks, Amy. Alexei.

DR. SHAROV: Well, we completed the yellowtail assessment review in 2020, one month before the COVID, and Kai and myself were on the peer review at the time. It's been three years, and so, I mean, if the assessment say will be rerun in 2024, that's about a very desirable time to have an update, and plus, of course -- I mean, if there is an indication of an additional survey that is useful, and might have the statistical properties that are better than the current MRIP estimates, that is great, but, still, with respect to FES, I just see that, you know, we have the potential issue being raised, and MRIP is going to be investigating this, and, until they complete this investigation, the additional pilot study, and come back, this --

I mean, no changes, in terms of the MRIP estimates, are going to be done, and so I'm just foreseeing what the assessment team will be facing, as they will be doing, potentially, next year. We'll be making a decision of what is the BSIA, in terms of the input data specifically, for the recreational fishery, catch and discard estimates, and all those problems that we discussed under BSIA yesterday -- I just expect that they will bloom and blow up right away there, and so I don't know if we could help with the sort of anticipation of that, but we will have to sort of be prepared for what is potentially coming.

Then the MRIP will come back, eventually, with a final decision on what they found and how the current estimates will be, or will not be, adjusted and what do we, and the assessment team, and what do we then next, and are we going to then request another update of the 2024 assessment? There will be, potentially, a necessity for that, if the agency will state that the MRIP estimates are BSIA in 2025, or 2026, and so, yes, these are the challenges that I clearly see are ahead of us, or at least ahead of the Florida assessment team. Thank you.

DR. BUCKEL: Thanks, Alexei. Chip, did you have something to that point?

DR. COLLIER: Yes, and I don't think the goal will be to go back from the State Reef Fish Survey. The State Reef Fish Survey now has funding, secured funding, through the State of Florida, and so they are comfortable with monitoring this stock, and also using this for stock assessments going forward, and the plan is not to go back to MRIP. The plan is to go forward with the State Reef Fish Survey. It has better estimates of precision, and the state feels very much more comfortable, with the data coming out of it, to represent the recreational catch, and so it's not going to be going back and forth between MRIP and the State Reef Fish Survey. Once it's completed, the goal is to use the State Reef Fish Survey to estimate and monitor the fishery.

DR. BUCKEL: Thanks, Chip. Amy.

DR. SCHUELLER: I get there's a lot of nuances in all of this, and I get that -- I mean, you made the statement that the state is more comfortable, and I don't know what that means, and so, for me, I want why are they more comfortable. I want the data. I want the science. I need all of that to be able to say, okay, I see where you're coming from, and, yes, I think you're correct, or no I don't, and here is why, and so, I mean, my point was I get that stuff is coming, and I get that these are not exactly the same as what we've discussed, but there needs to be a full package of information for us to move forward, because maybe the Gulf has talked about this ad nauseum for many years, and they're very comfortable and aware of it, but we're not, and so pretend, or know, that I know nothing about this, and it's very unlikely that I'm going to have time to go back and watch Bev's presentation, and so maybe we should invite Bev here.

DR. BUCKEL: Thanks, Amy. I've got Steve Turner and then Marcel.

DR. TURNER: Thank you, Chair. For the first bullet, I would prefer to say the SSC objects to setting. However, if that's not acceptable, then I would eliminate the word "some", and maybe insert "extreme", but I think that probably is not acceptable either, and so I certainly object to redoing a process that the SSC did three years ago, and it's not a reasonable approach.

DR. BUCKEL: How do folks feel about changing that language, the first bullet? Kai.

DR. LORENZEN: I, obviously, had that concern, and I'm very happy.

DR. BUCKEL: Carolyn.

DR. BELCHER: So I kind of -- In reading that statement, I want to make it clear that the council isn't asking for this because of new data. This came about because of the concerns with the FES change, the fact that it's been brought to our attention, that there's been a lot of concern about the overestimation of the effort, and we're -- You know, as science folks, those of us that understand

the relativity and that aspect of it, but the general audience does not understand that, because all they're seeing is that we're conflating fish, and we're shorting fish, and so, for us, the question was, when the information came out, our council took a very different approach than what the Gulf did.

The Gulf is looking to do a working group, looking into it, and our question was, based on what assessments we have in the queue, their dependency on this recreational data, meaning, A, is this a major rec fishery, should we pausing on these things until we have a better understanding of it, because, as we're moving forward into management, if these numbers have been inflated to the point where we're marrying them to the fish data, to get an understanding of what fish are out there, the fishermen are just seeing you keep constantly changing our goalpost, and so our questions are can we push pause on this?

Yellowtail is, obviously, very different than the other species you all would have talked about, because we're splitting it with the other council, which, again, is taking a very different approach to how they want to look at this data, and so all we're asking, really, is the pause button part of it, and it's not because of the new data, and we don't want to go back into it. If there's an option to move forward, and Florida has a solution, and it's a Florida fishery, we're kind of, you know, falling to their experience with that part of it, because, yes, we don't have the experience with the State Reef Fish Survey, but, if they've had it, is it something that we should investigate? Those are kind of the questions, and there's really not this -- You know, again, we're not picking up the ball and trying to charge it down the field because, oh, there's another dataset to fill in here. It's just should we consider it, is it a possibility, and that's why we're asking to go back into it.

The idea is we're moving forward, and, I mean, I'll throw out kind of the spoiler of it, and, you know, we've had questions about what do we do with Amendment 35, red snapper, and we've gone through, and we're at that point where we need to hand the amendment off, but there's a lot of strong opposition, at the council level, for it going forward right now, and we're going to revisit it in December, and so this is where we're at with that, and it's not that -- You know, again, we're not looking to say we want something better out of the numbers, but the questions are, as we're moving forward with this management, how are we going to defend this as we're moving into the public realm with it, and so help us either arm that better -- Again, I mean, I think, for us, it's pumping the brakes, and that's where we're split on it. We're totally split on it.

DR. BUCKEL: Thanks, Carolyn. We've got Fred Serchuk and then Marcel.

DR. SERCHUK: Thank you, Chair. Could we consider this under have we used the best scientific information available? If we've not used the Florida Reef Fish Survey, because it wasn't available, or it wasn't standardized, but now it is, then we have to really make a decision of whether it's worth basically saying, well, wait a second, and let's hold off, because we have another dataset that might improve the best scientific information available, and I think that might be -- I think we need to think about that. Both SSCs need to think about that, because that is our charge. Thank you.

DR. BUCKEL: Thank you, Fred. Marcel.

DR. REICHERT: I'll pass.

DR. BUCKEL: All right. We've got Erik Williams and then Genny and then Kai.

DR. WILLIAMS: Thank you, Jeff. I've been largely trying to remain a little silent, but I do have to step in. Carolyn mentioned that this is not because of new data, and it actually is. The MRIP pilot study is exactly that. It is new data coming before everybody, and the issue is we're not handling it the way we should, with the statistical and scientific rigor that we should, and I think that's what has gotten us in this conundrum. It is pilot study data, and it has all kinds of uncertainties, and it should have been evaluated accordingly, which the SSC did in their earlier action item, and I think that's where folks are losing track, and I hope we don't sort of ding, or damage, our scientific integrity with the way this is handled, but that is new data that has come to all of us, and it needs to run through the rigors of the system.

DR. BUCKEL: Thanks, Erik. Genny.

DR. NESSLAGE: I agree with everything that's been said about setting precedent, in the sense that this -- These pilot studies are not conclusive yet, and I think we've decided, as a group, that's our opinion, and hopefully that's helpful to the council, moving forward, in explaining to stakeholders, and others, you know, why we're not jumping on those data right away, although the estimates aren't even ready, but, even if they were tomorrow, we're not really ready to suggest that those be used.

That being said, I have never trusted the MRIP data coming out of Florida, the estimates for Florida, and I think that the survey doesn't suit Florida well, and it has not done it justice. I have always had those concerns, from day-one, and, given the nature of yellowtail in particular, I would welcome the incorporation, or at least the evaluation, and potential incorporation, of these new data, but I think it needs to be done in a proper process and not just update your ABCs.

This needs to be updated, or not even an update, but do a new assessment, and go through all the steps that we normally do, and then I would be very welcome to considering changing the ABC, based on whatever the best data is that's going in, and I suspect it's probably going to be the Florida State Reef Fish Survey, but we'll see when it comes up, and so I guess I'm excited that these data are now available, but I would like to see the proper process be followed, so that we are crossing our Ts and dotting our Is and making sure that this is the right move, and I'm a little worried about that second bullet, while I have the mic.

Just because it's been certified by MRIP, MRIP is still having problems, and so I'm not sure that that's like a glowing stamp of approval, and so, if we can maybe just -- I don't know, but just get rid of that, and I would feel much more comfortable, and say we would like the opportunity to review this through the normal channels of reviewing a new stock assessment, and I would welcome that. Thanks.

DR. BUCKEL: Kai.

DR. LORENZEN: That's right, and I think -- I mean, the scope of that certification is actually quite limited, and so it doesn't say that it's a really, really good survey or anything, and it just says, you know, we're happy to spend some federal funds on running it and developing it further, and so I think, you know, where we seem to be headed is that -- I mean, essentially, there will be an update assessment, right, or something like -- Eventually, this sort of rerun and so on, and I think,

if we can put that into a -- Into a reasonable framework, and it comes with all the -- It comes with the full package, as Amy would say, then, you know, that puts it into a reasonable process, and we can work with that.

We should just avoid this -- I am still concerned that -- Actually, I find that the reasoning behind the idea of taking the ABC back still sounds very all over the place to me, and it's not a clear -- You know, different people are saying different things, and I can see that, and so I'm sort of really uncomfortable still with that whole scenario, but I do think that, you know, three years on from the last assessment, and, I don't know, probably five years from the end of the input data stream, that, yes, we can have an update assessment, a new assessment, and I think that is the way this should go.

DR. BUCKEL: Thanks, Kai. Julie Neer. Go ahead, Julie.

DR. NEER: Hi, guys. I just wanted to -- I have two quick clarifications. Recall that yellowtail snapper, the benchmark, was completed in 2020, with data through 2017, and there was an interim analysis that you guys reviewed, and actually made your management advice off of, or looked at I should say, and that included data through 2020, and that was completed in 2022, and so it wasn't the 2020 report that you finally looked at, and it was one that came out in 2022, with data through 2020, just to clarify that, with regard to how old the data is, though it is still, you know, old. It's getting a little long in the tooth.

Additionally, my current understanding, and, as many have said, there's a lot of moving pieces, but my current understanding is that this will become essentially an operational assessment for yellowtail snapper, and it will have a SEDAR process, and it will have a full report, and it will likely, almost guaranteed, have a topical working group, and that will examine this potential shift from the MRIP data to the SRFS data, because it hasn't been done yet, and so there will be -- Hopefully, once we do all of those pieces, as both Amy and Genny have said, you will have the complete package, and when that happens is --

You know, there are many moving parts with that as well, with regard to when the Center can -- Even though it is a Florida-run assessment, there are a few pieces of data that come from the Center that are needed to do the full operational assessment process, and so that is my current understanding, is that it will be an operational assessment. If things change, we'll certainly let you guys know, but the goal, from talking to people, would be to have all the pieces, like a regular assessment, and then, as Genny says, it can come to you for your consideration to use or not, when it is completed. Thanks.

DR. BUCKEL: Thank you, Julie. You had lots of nodding heads and smiling faces, and so thanks for -- Marcel.

DR. REICHERT: That was very, very helpful, and, in that respect, I feel a little more comfortable about this, especially since, you know, earlier, it was said that, in Florida, the Florida survey is going to be used in the future, and, you know, traditionally, procedurally, those decisions are usually made during the assessment process, and so, if there is another benchmark, then those decisions would be made on whatever analytical information is available, and so, again, thanks for that clarification.

DR. BUCKEL: All right, and so Judd has been taking excellent notes here. Judd, do we take public comment on this one? Okay, and so now is the chance for public comment. Julie, your hand is still up. Is that left over?

DR. NEER: It's left over. Sorry.

DR. BUCKEL: No problem. All right. Seeing no hands, and if there are no hands here or online from SSC members, we will move on to the next agenda item. Item Number 12 on our agenda is the Climate Change Scenario Planning Update, and I will point you to Attachment 12a and Attachment 12b, and council staff is going to give us a presentation on this.

CLIMATE CHANGE SCENARIO PLANNING UPDATE

DR. CURTIS: Again, this is mostly just informational. This agenda item kind of developed out of the concept of, you know, everything I've been seeing that kind of ties into any sort of climate change that's been happening, and so a lot of the concerns with things like regime shifts, low recruitment, dynamic biomass reference points, and, you know, we're wrapping these all under kind of a climate change scenario planning update umbrella, and we have, you know the Climate Change Scenario Planning Summit report that is available, as well as the agency's climate document that was reviewed by the SSC in September, but this is mostly just to update the SSC on some of the potential ideas that staff has kind of drummed up, as far as tackling some of these issues.

The Center, of course, is working on several of these things already with some workgroups, as far as low recruitment dynamics, and we'll probably see a presentation on that in the April SSC meeting, but some ideas that staff has been thinking about is, you know, potentially holding something like a data workshop dedicated to all these climate change issues, potentially having RFPs for research proposals to investigate some of these topics, and then how to operationalize those into management for the upcoming year, and so this is nothing that's impending right now, and it's just something to kind of start thinking about, and, if there's any feedback from the SSC on what might be an effective mechanism to start thinking about these things that are becoming very pervasive in the South Atlantic, and how to address those and integrate them into stock assessments, into the management process, you know, we can open it up for any ideas from the SSC at this time, and so that's really all this topic wanted to address, or I wanted to address in this topic, and, if there are any ideas on what SSC members would like to see, we can go ahead and voice them now, but stay tuned for more details in 2024.

DR. BUCKEL: All right. Thank you, Judd. Any questions on the climate change scenario for Judd? Genny.

DR. NESSLAGE: Has there been any discussion about this plan, and the reports, and how these agencies and councils and commissions are going to respond to the NOAA memo that we reviewed last time about how, with climate change, we're just going to flip councils suddenly, and was that brought up, or was this already done by the time that came out, and that was a surprise, and has the council discussed that? I'm sorry that I haven't been on top of it.

DR. CURTIS: The comments for the agency's document that was reviewed at the September meeting, those were compiled and added to the council's comments and recommendations and then forwarded along to the agency, but we have not seen anything, or I have not seen anything, since that has been submitted.

DR. NESSLAGE: I was just wondering if -- I don't know if Carolyn, or somebody else, could summarize what the council thought about that, because that would probably throw a big wrench in a lot of what I'm seeing in this report.

DR. BUCKEL: Chip is coming to the table. Go ahead, Chip.

DR. COLLIER: The council gave comments, similar to the SSC, on the climate change process going forward, but this scenario planning has been going on for a few years, and it's a combined effort, among and including NOAA Fisheries, as well as the other two councils and the Atlantic States Marine Fisheries Commission, and so the council is probably going to be leaning more on this scenario planning as their process going forward, with keeping in mind that the guidance that is coming out of NOAA Fisheries -- They will have to abide by that as well, but this is the plan that they want to use going forward, and it's been agreed upon, and so they're still working on this. There is additional processes that are going to be going on, coming in the future, and we'll see where it goes, but, yes, this is the agreed-to plan, I believe, among the councils on our coast.

DR. BUCKEL: John Carmichael, go ahead.

MR. CARMICHAEL: Thank you. Genny, that's a good question, and so I will give you the latest from the CCC meeting a few weeks ago, and where the council stands, and the councils were quite frustrated with that document, with the governance proposal, with the level of detail, with some of the things that are proposed, as far as being evaluated, and concerns that it could lead to changing governance decisions, you know, kind of in knee-jerk ways over time, and that there's not really a real robust way that's laid out within the document for determining when a species truly is moving, and so the CCC has raised concerns about this repeatedly.

At the last meeting, they passed a motion requesting that NMFS work with a representative workgroup of the CCC, getting all the councils to try and come up with a more reasonable approach, and to really just improve that policy directive document, to turn it into something that's more workable, and the three east coast councils are, and have repeatedly, reminded NMFS of our climate scenario planning process and our willingness to work together, and we pointed out the many ways that we have worked together on various species, since our existence really, for dealing with the species that cross our boundary.

You know, it's probably not a surprise, but those of us on the east coast are quite concerned about this, because we stand to be the largest group of those folks impacted by these changes, and, in particular, with the South Atlantic Council, we bring in the concern of species that are crossing over NMFS boundaries, going from the Southeast Center to the Northeast Center.

As a case-in-point, we raised the issues with cobia that existed at the last assessment and which have led, in this coming-up assessment, for the Southeast Center to basically call on the ASMFC and the states for help, because of concerns about getting into datasets that are managed and kept by the Northeast Center. On top of that, we have the difference in the way we do surveys, and so

we've raised a number of concerns about the document, as well as about NMFS' ability, within its own data monitoring and survey programs, to really deal with many of the issues that are laid out in that governance document.

We are holding out hope that the government, the agency, will go ahead and work with a group of CCC representatives to try and come up with a more workable document, but, you know, the bottom line is, across-the-board, the councils are as frustrated with this as the SSCs have been, and, you know, you guys raised a lot of concerns, and the Mid-Atlantic also raised a whole bunch of concerns about it, as did the New England, and so there's a lot of concerns out there, and it's still a work in progress, and thanks for giving me a chance to update on that.

SCS8 MEETING SUBTHEME TOPICS

DR. BUCKEL: Thank you, John. I'm glad that other groups felt the same, and that's good. All right. Any other questions on this agenda item? All right. Seeing no hands, we will go to public comment, and so, if any members of the public that are online or here want to comment on this, please do so now. Raise your hand. Okay. Seeing no hands, we will move on to Agenda Item 13, and this is the SCS8 Meeting Topics, and so this is -- For those of you -- It's confusing for me, because these used to be called the National SSC Meetings, and now they're the SCS, and that stands for Scientific Coordination Subcommittee.

I will point you to Attachment 13b, which is a presentation to the CCC, which is -- John just mentioned that meeting happened a couple of weeks ago, and that's the Council Coordination Committee, okay, and so the SCS -- The chair of the SCS8 workshop is Dr. Lisa Kerr, and the New England Fishery Management Council staff, Dr. Rachel Feeney, has been also working on this, and so there's been several meetings of the SCS workgroup, the SCS8 workgroup.

After several meetings, the theme for the 2024 SCS meeting is applying ABC control rules in a changing environment. The meeting is going to take place August 26 to 28, next summer, in 2024, at the Seaport Hotel in Boston, Massachusetts. The plan is to have four members from each region attend this, and, for those of you that remember, the last meeting was two years ago in Sitka, Alaska, where several of the SSC members and council staff attended.

Following up on that theme from that Sitka meeting, what Lisa and Rachel asked us to do was the take the theme, and the sub-themes in particular, back to the individual SSCs and get feedback, and they asked for potential other sub-themes, and so these are the four sub-themes that are currently on the books that would be addressed.

There would be plenary talks on each of these, and then individual talks from each of the regions, and so those are the -- I won't read through them, and you can read through them now, and we have, from this meeting, Fred Serchuk provided another sub-theme on the projections and how to deal with changes in the landings-discards ratios, and how that could impact benchmarks, and so I think that's a good one. It may not fit exactly under the changing environment, but we could probably work a sub-theme language to fit. Go ahead, Fred.

DR. SCHARF: Just a comment, and so I agree with the addition of the one that Fred recommended, but, if you look at Bullets 3 and 4, they don't say, or state it, explicitly, but Bullet

3 should end up dealing somewhat with interim analyses, and so you know, using alternate reference points and analyses on data constraints, in the absence of analytical assessments, and so, you know, we've spent some time, and, in fact, the staff here is going to have a report, and they're going to work on an interim analysis report for us to review down the road, in terms of developing a framework for those, and so I think that's a timely topic as well, that those discussions will benefit us. Then the last one is really talking about regime shifts, and changes in productivity, and so another issue that we've been dealing with and thinking about a lot, and so I think both of those are two things that are relevant to our issues here.

DR. BUCKEL: Other comments?

DR. SCHARF: So I just wanted to echo Genny's excitement. I was happy to see that she was excited earlier, and so I'm excited to see those topics.

DR. BUCKEL: Yes, and the other councils are struggling with the same questions that we are, and so that was -- Chip.

DR. COLLIER: I do want to point out the second bullet, and I think that one is very important as well, and social science is going to be extremely important in the face of climate change. Knowing these communities, how to define communities, getting more information on that, I think is going to be critical, and I see that the social science corner over there is -- They're very excited, too.

DR. BUCKEL: Okay, and so that -- I'm glad to hear that the sub-themes that were identified by this workgroup -- That folks are happy with, and some very happy with, and then we'll add Fred Serchuk's sub-theme on the projections, when landings and discards -- When selectivity could change through time in projections and how that impacts benchmarks and how that's being handled by other councils. Chris and then Marcel.

DR. DUMAS: I would like to echo the comments of others, and I'm excited about this. I think this is great, especially for North Carolina and the potential for stocks shifting north from North Carolina, black sea bass, and possibly summer flounder also, and how those shifts, or expansions, potentially, of ranges could affect fishermen in the northern end of our council's area, and so, you know, there are a lot of folks who -- There are fishermen in North Carolina who not only fish for these species off the coast of North Carolina, but also farther north, and so they are affected by shifts in species, not only off the coast of North Carolina, but, if species farther north, say off of New Jersey or something like that, shift even farther north, then that has implications for them, in terms of steam time and things like that, and so I think this is pretty applicable for our region as well. Thanks.

DR. BUCKEL: Thank you, Chris. Other comments? Judd, if you could just -- Alexei.

DR. SHAROV: I don't have a comment, but rather a question, and that is, time-wise, when -- Until what time will the group be accepting, or the committee will be accepting, you know, titles, abstracts, for presentations, because I assume that there will be a presentation provided by each SSC, and then, you know, obviously by this group as well, but, if there is specific research that has been completed, when and where should people interested in it submit it to, for the consideration?

DR. BUCKEL: That's a great question. What happened for Sitka is -- Judd and I are attending these meetings, and when the call goes out, then we'll come back to the SSC, and then also talk with council staff, and so that's what happened for Sitka, is we identified several projects that were addressing those sub-themes, and then approached those folks, to see if they would be willing to attend and present, and so I see that happening over the next three to six months, and, Judd, if you could scroll down to the last slide, or Slide 6, one of the things that the workgroup wanted to do is to get SSC input ahead of the workshop, and so that's one reason we're bringing this to you now.

You can see, on the left there, the goal is to increase engagement by SSCs, with regular updates, and so Judd and I -- I think there's a meeting coming up here in the next month, and so we can report-out on that at the January webinar to you all, and then we'll see if -- They may be putting a call out for potential attendees and case studies at that point, and so be thinking about that. If you know of -- It doesn't have to be an SSC member, right, and, last year, Brendan Runde, from The Nature Conservancy, presented on a project that he was working on with the Center that addressed a sub-theme, at the Sitka meeting, and so -- Judd.

DR. CURTIS: Unfortunately, one of the planning team meetings was actually yesterday, while were in the middle of our SSC meeting, and so we'll get the notes from that meeting, and if there's any recordings or something, and forward that along. I think there is one more before the end of this year, and so then we can provide an update on some of those questions that you had, Alexei, in January, at our webinar.

DR. BUCKEL: I knew it was on my calendar, but I didn't realize that it was yesterday. All right. Okay. Any other questions or comments on this? So, Alexei, stand by, but, if you have ideas, you can send them to us now, and, if you want to attend the next meeting, we can let you know, but you can see, at the bottom, that several SSCs are engaging, and more would be helpful, and so, if you want to be involved with this, and you have interest in the overall theme, or the sub-themes, please get involved. All right. That's all I had on this topic. Do we take public comment on this one as well? Okay. Judd says no public comment needed on that, and so we'll move on to Agenda Item Number 14, the Fishery Management Plan Amendment Updates. That's Attachment 14a, and Myra is going to give us a presentation. Thanks, Myra.

FISHERY MANAGEMENT PLAN AMENDMENT UPDATES

MS. BROUWER: Okay. Good morning, everybody. I'm just going to give you a quick update of what we've been up to and where the amendments are that the council has been developing and all that good stuff. I'm just going to walk you through this document, and this is our -- We call it our active amendments document, and so, basically, it just tells you what each amendment does, where it is in the process, and when we can expect changes to be implemented.

I will just go over some of these. Snowy grouper, Amendment 51, was developed in response to the SEDAR 36 update, and the amendment was approved, but a final rule has not yet published, and so this amendment revises the annual catch limits, sector allocations, the recreational season, and the recreational accountability measures for snowy grouper. We expect that that's going to be implemented soon.

The next one is gag and black grouper, Amendment 53. Again, another amendment in response to an assessment, and this amendment put in a ten-year rebuilding plan for gag, starting this year and going through 2032. It adjusted the catch levels, reduced the commercial trip limit for gag, and the council also is proposing a private recreational vessel limit for gag and black grouper of two fish per vessel per day, not to exceed the daily bag limit of one fish per person per day, and then the same thing for for-hire, and that vessel limit would be per trip per day.

One thing that came to the council's attention with this one is, during the rulemaking, we realized that the council had intended for that vessel limit to be combined, for gag and black grouper combined, and so just two fish, either black or gag grouper, and that is, in fact, not the way it was written, and so we are getting ready to do a framework amendment to correct that, and I will tell you about where that's going to be here in a minute.

The next one down is Amendment 49 for greater amberjack, and that one is actually going in place today, and that one is going to adopt the OFL and the ABC, in response to the assessment. Again, catch levels and allocations, and this one also removed all the annual catch targets from the Snapper Grouper FMP. They were not being really utilized, and so the council just said, okay, let's take them out.

This amendment also adopts new goals and objectives for the snapper grouper fishery, and then it just, you know, does changes to management measures, the commercial season, and it's a split season for greater amberjack, and it also decreased the commercial minimum size limit in federal waters, from thirty-six to thirty-four inches, and it increased that second season's commercial trip limit to 1,200 pounds per trip, up from 1,000, and then it also prohibited sale during April, and also recreational harvest, and so it used to be that it was only a sale prohibition, and now there is no possession during the month of April, and I think that's all that one does.

The next one is golden and blueline, and that's Amendment 52. That one is under review, but a proposed rule has not yet published, and so we've been told that the intent is for this amendment to be in place by the beginning of 2024. This one would increase the catch levels for golden tilefish. The council also chose to delay the start of the longline season for the commercial golden tile to January 15. It adjusts the recreational accountability measures, and so the council has been trying to do all these adjustments of accountability measures, kind of a little bit species-by-species, and, at one point, they were wanting to just do like a blanket amendment to do it all at once, but that just didn't work out.

This one also responds to issues with blueline tilefish, and it prohibits retention by captain and crew, and it reduces the bag limit from three to two, and it also adjusts that recreational season to where NMFS now needs to predict how long that season will last, still within that window of May through August, I think it is, to make sure that there are no overages. We've been having a lot of overages in that fishery over the last few years. Wreckfish --

DR. BUCKEL: Genny has a question, Myra.

DR. NESSLAGE: You said goldens will be delayed out of January, and there will be no January?

MS. BROUWER: No, and I'm sorry. It will be -- It used to start on January 1, and now it's going to start on January 15, and that is to give those folks a little bit more time to get ready. This is a

request that came from the Snapper Grouper AP. You know, it's kind of, I would imagine, pretty difficult to just be ready to start fishing on January 1, and that's such a short fishery, and it's a derby fishery, and so they requested that delay, and, also, there is some economic advantages. You know, it just -- It lengthens the period during which golden tile are available into the Lent season, and it brings better prices for fishermen, and so the fishing year will remain the calendar year.

DR. NESSLAGE: Is there -- I know there was some concerns, a while back, about safety, and the derby nature of that fishery, and going out in January and February, and has that been a concern of the advisory panel, and are they going to do anything about that? I'm just curious.

MS. BROUWER: It did come up. The shareholders, the longline endorsement holders, had requested basically getting together and trying to come up with different ways to manage that component of the commercial fishery, and it is not an established advisory group, and so I think the council needs to decide whether they want to make that, you know, a sub-AP, or an ad hoc AP, to proceed with that, but, no, those discussions have not happened.

Moving on, the wreckfish amendment is a work in progress, and that one is moving kind of slow. We're still working on that, and Regulatory Amendment 35 is the one that Carolyn mentioned, and this is the red snapper amendment, and it was approved by the council in March of this year, but, as Carolyn said a bit ago, the council has requested revisiting whether they're going to submit this amendment, and so it's on the agenda for the December meeting, and, you know, it has to do with, as you guys have been talking about, the results of that FES pilot.

Moving down, the next one down is the amendment that would establish a private recreational permit and an education requirement, and so that one is under development. There is a temporary technical AP that's been advising development of that amendment, and the council is set to approve that for public hearings in December. They're also requesting -- We're putting together a private recreational advisory group, and so just composed of fishermen, and so that's in the works.

Yellowtail, you guys already talked about, and so I don't think that I need to go over that one. Amendment 55, lovingly referred to as scamp and friends, and this one is a little bit of a challenge. This one establishes a new complex, right, for scamp and yellowmouth, and the issue there is that you would take yellowmouth out of the other shallow-water grouper complex, and then that kind of throws off the catch limits for the complex that would be without yellowmouth, and so we're trying to figure out how to proceed with that, to adjust those ACLs, because I guess those include the CHTS estimates, and we don't currently have -- Or we don't have current ABC recommendations for that group of species, and I know you guys talked about this in more detail recently, and so, again, we're in discussions and trying to figure out how we're going to proceed on that, and maybe Chip has more.

DR. COLLIER: No, and I just wanted to remind the SSC that the plan, going forward for this, is to continue with the other shallow-water grouper species in the CHTS units, just because we want to make sure that we have catch levels that are under the MRIP precision estimates of 50 percent, and most of these are data-limited species, or rare-event species, and so their PSEs -- I've seen some of them that actually exceed 100, and so they are pretty high, and we're a little bit concerned to change them up too much right now, and the plan, to go forward, and Vivian, or Erik, is going to be talking about the unassessed species in the next agenda topic, but, right now, the plan is to keep them in CHTS units, and just subtract out the yellowmouth, because of not only concerns

with the catch estimates, but also with the previous methods to develop ABC recommendations, which was either using third-highest or the ORCS approach, and the SSC has indicated that there might be better approaches, and they would like to consider those when establishing new ABCs, and so I'm just letting you guys know what the plan was and to see if there were any concerns with the plan going forward for that.

MS. BROUWER: Okay, and so, moving on, the next one is Snapper Grouper Regulatory Amendment 36, and this is the one that would fix the black and gag issue with the vessel limit, and also incorporate on-demand gear for black sea bass into the fishery, and so that one -- We just got direction to start it, and so that one is early on, and it's going to be a framework amendment, and so hopefully that will move quickly.

There is, you know, things that have sort of been on the back burner. The MSE you guys have talked about, and you'll get a lot more information on that at your next meeting, and we're continuing to work on that. Unassessed is the next topic, and we're kind of standing by on black sea bass. We have received direction to begin an amendment to change the catch levels for that.

For dolphin wahoo, we are still awaiting the results of that dolphin MSE that the Science Center is conducting, in order for the council to proceed with any management changes, and then I think a lot of this stuff is just kind of on the back burner. Then, for CMP, coastal migratory pelagics, we are working on Framework Amendment 13, which is the one that would adjust the catch levels for Atlantic Spanish mackerel, and we're going to be conducting scoping for that next week, I think.

Then I think there are two amendments that I wanted to update you guys on. The Commercial Electronic Logbook Amendment, and that one was approved by the South Atlantic Council, and the Gulf Council is expected to approve it this week, and so that will be submitted sometime in the next few months, and then the Comprehensive ABC Control Rule Amendment, and I know that came up in discussion this week, and that one is under -- The comment period for that one is open until November 13, and so it's moving along through the rulemaking, slowly, and that's what I have for you guys. Any questions?

DR. BUCKEL: Thanks very much, Myra. Questions for Myra? Anyone online, Chip? Thanks, Myra. We will take public comment.

DR. CURTIS: No hands raised.

DR. BUCKEL: Okay. Judd tells me there is no hands raised, and, under the action item for Agenda Item 14, there's no action needed, and so we'll move on to Agenda Item Number 15, the MRIP-FES Data for Unassessed Species Update, and I will point you to Attachment 15a. We have a request for a break, and that sounds good. It's 9:50, and so we'll start back up at 10:00 a.m.

(Whereupon, a recess was taken.)

DR. BUCKEL: All right. We're going to go ahead and get started again. Please come back to your seats. All right. Next up is Agenda Item Number 15, the MRIP-FES Data for Unassessed Species Update, and please open Attachment 15a for the presentation, and Vivian is going to give us that presentation, and, Judd, are you driving?

DR. CURTIS: Yes.

DR. BUCKEL: So, Vivian, you can start whenever you're ready.

DR. CURTIS: I will just drive for you, Vivian, on this end. It's just a couple of slides, if that's all right with you.

MRIP-FES DATA FOR UNASSESED SPECIES UPDATE

DR. MATTER: That's great. Thank you. Good morning. My name is Vivian Matter, and I work with the Southeast Fisheries Science Center, and I just wanted to give you a brief update on some work that the Science Center and the Office of Science and Technology have begun this year, looking at estimates with high imprecision.

We just convened this group jointly, right, to discuss, as I said, these highly imprecise estimate scenarios, which impact assessments and management, and some of the questions that we asked ourselves, as a group, were, you know, basically looking at what are some of the viable alternative estimation methods that can be used when estimates, recreational estimates, exceed that precision threshold, and how do we use these methods in a standardized way across the region, and how do we maintain consistency between the stock assessment and management, and those were the three really charges of that group to start looking at.

We held a scoping workshop this summer, and that was really just to start getting a handle on, you know, what are the scenarios of impacting assessments, meaning what different sorts of scenarios do assessors come across for these highly-imprecise estimates, at the annual level and, you know, by fleet structure and all that, and, you know, basically looking at what are some of the cases where we have high PSEs occurring at the beginning, which we've seen a lot of in those early 1980s, and what are some at the end of the time series, or throughout, and basically just looking at what that meant for those assessments.

We started looking at past data use decisions that could impact, you know, how we move forward on this, and, of course, we plan for future work, and so we kind of laid out what are the steps needed to kind of start answering those questions, and so, to that end, we're reconvening again next week, and the week after, for a half-day workshop, and, as I said, we're just going to review those past data use decisions. We're examining the different alternative estimation methods available and looking at the resulting precision using those examples from the South Atlantic and the Gulf of Mexico regions. We're also exploring how the public use datasets can be used to produce alternative estimates.

It's not a whole lot to report right now, other than what we've scoped out for ourselves and the questions that we're tackling. I will say that, you know, on that preliminary scoping workshop, we did find that, you know, this precision threshold won't necessarily exclude high estimates that are often scrutinized during assessments. There are very often high estimates that are critically examined during data workshops that fall well below that precision threshold, and so it's just something to keep in mind, and that's all I have, and so, if there are any questions, I'm happy to answer them, if I can.

DR. BUCKEL: All right. Any questions for Vivian? Genny.

DR. NESSLAGE: Hi, Vivian, and thank you. Are you the same group that Erik Williams keeps talking about regarding dealing with like spikes and gaps and alternative ways to produce more reliable estimates for assessments that has been meeting, or is this a separate effort?

DR. MATTER: I'm not quite sure. I will let Erik chime-in there.

DR. WILLIAMS: Genny, what has happened is there was a rare-event species working group that was formed, and that was probably three years ago, or, actually, it may have even been pre-COVID, but, anyways, that group sort of operated for a couple of years and then sort of died on the vine. They made some recommendations of things to explore, and then this group is sort of picking up some of the pieces of that, but also, you know, sort of focused specifically on, okay, what do we do with these estimates where we do have a PSE that's, you know, say over 0.5, and what can we do, and what are the tools at our disposal to sort of deal with that and still get useable data for assessments, and so, yes, I've been on this train for a while, and it has sort of morphed, and I've been going along with it, and I'm hoping that this workshop comes up with really some sort of concrete methods, and tools, that we can use, and so, yes, we'll see where it goes, but, yes, that's sort of the history.

DR. BUCKEL: Genny, to that point, and then Chris.

DR. NESSLAGE: Thanks. So this is in -- This would be -- I don't want to say independent of MRIP, and I'm sure there are MRIP folks involved, perhaps, but this would be how the Center would recommend that we move forward with the estimates that are provided by MRIP, correct, and this wouldn't be adjusting anything in the actual MRIP estimates, or am I misunderstanding?

DR. WILLIAMS: I think it's actually the opposite. This is heavily involved with MRIP staff, and we're sort of guiding them to help come up with sort of design-based, MRIP-based, methods for dealing with these high PSE values.

DR. BUCKEL: Chris.

DR. DUMAS: I just wanted to mention that there might be some methods, and examples, that might be useful in the appendices to the National Academy, the recent National Academy, report, *Data and Management Strategies for Recreational Fisheries with Annual Catch Limits*, and so I was part of the committee that put that report together, and I know, in the appendices, there were some methods, and some examples, that might be useful to this group. Thanks.

DR. BUCKEL: Thank you, Chris. Alexei.

DR. SHAROV: This is great that this is happening, but I am curious, and have you considered just PSEs as sort of the principle source of uncertainty in recreational data, and what standard, or threshold, did you use? I'm sure you had discussions, and that is have you used like the current MRIP thresholds, as they identify them, and like, for example, a 50 percent PSE that they flag, that they put it in red, or they target these, and what is -- What has been considered at this point?

DR. MATTER: Yes, and we started off considering that 50 percent that gets flagged on the query page as that threshold, and that's what we've been discussing.

DR. WILLIAMS: I will add to that that I think that the goal is to develop some methods that could be applied to sort of any threshold, that, if you want to try and reduce the PSE, what sort of design-based methods are available to get that PSE below whatever threshold you want to try and get it below, and that's sort of one of the goals here as well.

DR. BUCKEL: Go ahead, Fred Scharf.

DR. SCHARF: So just a question. The working group is, you know, titled "Unassessed Species Working Group", and is the thought, within this group, that some of these methods to deal with high PSE values in the recreational data could be applied more broadly than just unassessed species?

DR. MATTER: The workgroup isn't called the Unassessed Species Workgroup, and I'm not quite sure how like the title on the agenda, how it fell out, but we were asked to just give an update on the Precision Threshold Workgroup.

DR. BUCKEL: Other questions for Vivian and Erik?

DR. MATTER: Sorry, and I just wanted to follow-up on that, but, yes, we are looking, right now, at assessed stocks.

DR. BUCKEL: Thanks for that clarification. We'll make sure we capture that in our report, a correction to the name of the workgroup, and I had a question. You know, the design was mentioned, and so this is statistical design or -- I understand that, for the historical data, that nothing -- That maybe there is something -- I see public-use datasets, and maybe something could be mined to bring it bring in other data, but, moving forward, is this workgroup going to suggest, or come up with recommendations, for improved sampling?

Is that a possibility, or increased sampling, or what it would take to get PSEs reduced with increased sampling, and maybe, you know, with that analysis, that you would determine that it's just impossible, because it would be too costly, but that would be informative, so we're -- You know, if we could try to not deal with it statistically, which may or may not be palatable to SSC members, and I'm seeing quizzical faces when we were talking about how the design is going to improve this, and so statistical design, and so I'm just curious about any -- If the workgroup is going to tackle any future sampling to improve the PSEs.

DR. WILLIAMS: Sure, Jeff, and those are good questions, and so what you're referring to is sort of a power analysis, and I don't think that's the intention of this group at this point. What we're looking at is how can you get a specific estimate, through sort of the design-based -- Think of it as frame collapsing, sort of collapsing across either -- Depending on at what level the imprecision is occurring, and you can collapse across and borrow neighboring strata, so to speak, in a stratified sampling design, to get your PSE below a threshold.

In the sense of an annual estimate, if we're talking about an annual estimate of over 50 percent, then what we're talking about is multiyear estimation, and so that's where we're sort of headed, is

that are the design-based methods that you can use to frame collapse, and, you know, there's more technical terms, like small area estimation methods and things like that, that are sort of statistically-valid methods to combine across multiple strata to get your final PSE value below some threshold, and so I hope that helps.

DR. BUCKEL: Yes, and that helps a lot. Thanks for the clarification. Any other questions? Jason.

MR. WALSH: I think this is a super interesting and valuable workgroup process. I was looking at the timeline kind of, and so you guys are obviously meeting in the next three weeks a couple of times, and this might be a naïve question, but what is the next step? Like is there some sort of report that will come of these workgroups, or is there going to be some sort of presentation that you'll be planning to bring back to the SSC, or the council?

DR. MATTER: So we're going to convene, as you said, in the next couple of weeks. Based on discussions at those meetings, and what we've found, right, with the analyses that have been done since July, that kind of will determine the next steps then. We do have in mind to -- We have some recommendation, for example, or some path forward, to make sure that we bring in management, and, as I said, one of the questions we asked is how to maintain consistency between assessment and management, and so we don't have an estimate yet, as to, you know, a timeline, and, since we don't know what our outcomes will be from this work, it's kind of hard to guess, but we're just kind of taking it step-by-step.

DR. BUCKEL: Thanks, Vivian, and thanks, Erik. Chip is coming to the table.

DR. COLLIER: I was just wondering if we could request an update for the April meeting. You know, the SSC is waiting on these values to begin work on their unassessed species, and we do need landings values, and this is -- In the South Atlantic, recreational data is very important, and so, as soon as we can get these values, you know, it would be great, even if there are approaches that aren't fully vetted, and what the group is narrowing down might be a good approach forward, but, yes, we would like some numbers, sooner than later, in order to really start addressing some of these unassessed species.

DR. BUCKEL: So let's put that on the -- Judd, if we can add that to April, and does that work for you, Vivian, an April 2024 SSC meeting presentation, to update us on the workgroup's findings?

DR. MATTER: Yes, and we can do the same kind of update that I'm giving right now, just to let you know where we're at.

DR. BUCKEL: Great. Thank you. All right. I don't see any other hands here. Any hands online? Okay. Then we'll take public comment on this agenda item at this time.

DR. CURTIS: I am not seeing any hands.

DR. BUCKEL: All right. Judd says there is no hands raised from the public, and we do not have any -- There is no action needed, and maybe we just type in that we'll request a presentation. You've already got it. Great. All right. So, moving on to Agenda Item 16, Other Business, and I think Judd is going to tackle this one. We've got three items, the Ecopath, the tilefish blueline

assessment, and then the black sea bass projections, and Judd has got a few slides to show you on what those OFLs and ABCs look like that we requested, and potential ways forward on that, and so, Judd.

OTHER BUSINESS

ECOPATH SSC WORKGROUP MEMBERS

DR. CURTIS: Yes, and I figure we can knock the first two off quickly, hopefully, and move on to a more lengthy black sea bass discussion. On that, I did forward some additional projections that Matt put together yesterday for that, or this morning, and so that should be in your inboxes, and I will bring that up when we get to that agenda item topic, as well as Chip has got a presentation that he's going to provide as well, but first things first.

The Ecopath with Ecosim workgroup, there's been a team that's been developing the Ecopath with Ecosim model for the South Atlantic. We reviewed the latest iteration of that last fall, maybe, and they have indicated that they have added an Ecospace component now to this model, and they're looking for SSC feedback, because it's ready for another round of reviews, and so we've, unfortunately, lost several members of the SSC's workgroup since the last time it was reviewed, and Yan Li was the chair of that workgroup, who is, obviously, no longer on the SSC, as well as some other members, and so we need to fill, and populate, that Ecopath with Ecosim workgroup of the SSC. Ideally, if we could get like a geographic spread across the region of members, but, the way things have gone, we'll take what we can get.

DR. COLLIER: Just to build on that a little bit more, what the FWC staff, who is working on this, is requesting is a webinar with some of the workgroup members, in order to discuss the implementation of Ecospace, and one of the big questions that they're going to be looking at is can Ecospace be used to look at changes in the black sea bass population distribution. There is plenty of information out there, and we want to see if this model potentially works for it. Once the workgroup members kind of review it, then it will come back to the SSC, when the final product is ready, and so hopefully that will -- I'm thinking that might be April or October of next year.

DR. CURTIS: Chip, you're thinking the time commitment on that was going to be about just a one three-hour-ish webinar?

DR. COLLIER: Yes, that's the plan, and they would like to have it before the end of the year, just trying to give everybody -- To let everybody know what the time commitment would be and when it would occur.

DR. BUCKEL: Thanks, Chip. Thanks, Judd. Are there volunteers for the Ecopath with Ecosim with Ecospace? Marcel.

DR. REICHERT: I was a member of the original working group, and so I'm willing to come back to that working group.

DR. BUCKEL: Great. Are the other remaining -- I know you mentioned that we lost some, but, if you know that you were on that workgroup before, raise your hand, I guess. Alexei.

DR. SHAROV: I am on that group. I mean, nobody released me of those duties, and I just wanted to double-check.

DR. CURTIS: I believe that Alexei was our one remaining member.

DR. SHAROV: All right, and so my sort of comment, and observation, is this is very good work, and the folks that are working on this at FWRI -- I mean, they are doing great work. There is a lot of information, and the model is complex, and it's certainly -- I mean, for the group to be successful, ideally, the person would have to know the structure of the EwE, although some high-level experts were saying that this model has to be banned forever, and deleted from all computers, but, anyways, it would be -- I think either you should know a little bit about EwE or you should be a good expert, regional expert, on the principal species that are likely to be explored and discussed where the EwE application is thought to be plausible within the next three to five years, whatever it is, but it is really an exciting group, with exciting and interesting results, and so I really highly encourage you to join.

DR. BUCKEL: Thanks, Alexei. Marcel.

DR. REICHERT: I echo what Alexei just said, and I'm not sure if that's possible, but can we add someone to that working group with maybe some Ecopath and Ecosim experience, because I don't think we have that internally. We may, but I don't think we do, and, since it is getting pretty complex, the modeling and how it's all integrated, and that's just a suggestion, but I think it would be helpful.

DR. BUCKEL: Is Dave Chagaris still helping out with this, Chip? Okay. Great, and so there's another plug. If you haven't interacted with Dave Chagaris, from the University of Florida, he's an expert with this software, and I know that Amy and Genny have worked with him on the menhaden. I am trying to get takers over there, but Amy and Genny are shaking their heads no. It's on the record now.

DR. SCHUELLER: I can say it on the record. I would not like to be a part of this workgroup, please.

DR. NESSLAGE: But not because of Dave Chagaris. We love Dave Chagaris. He's great.

DR. SCHUELLER: Truth. We love Dave Chagaris.

DR. BUCKEL: Thanks for that. All right, and so that's something we can continue to pursue, and, if folks have names for outside members that could potentially help Alexei and Marcel with this, that would be great.

TILEFISH AND BLUELINE TILEFISH ASSESSMENT POTENTIAL DELAYS

DR. CURTIS: Okay. Next up is the tilefish and blueline tilefish, and so there's been discussion of potentially delaying these assessments to incorporate the SADL survey and have a full five years, which was the recommendation that came out of the workgroup, in order to develop that

index to be incorporated into the stock assessments, and so these were scheduled to begin in 2024. If we waited on this with the inclusion of the SADL survey, that wouldn't go until 2026, and five years of data would made the SADL survey ready by 2025, and that would be the last year of data, and so ready for a 2026 integration.

The question that we have for the SSC is then is this appropriate to delay these assessments, based on the inclusion of new data, which we got some discussion about that already, and we'll get some feedback from the SSC on whether or not it is appropriate to delay these assessments to include the SADL surveys into the tilefish and blueline tilefish assessments.

DR. BUCKEL: Genny.

DR. NESSLAGE: I can't speak for blueline, because I don't -- I wasn't involved, but golden at least, if I recall, the commercial CPUE index, because of changes in management, was no longer considered appropriate for use as an index, and it was the main one that we were relying on in that assessment, because MARMAP really wasn't catching them very much, and so I would be supportive of delaying until we actually have some data to inform this assessment, unless I've forgotten the details, and then someone should correct me.

DR. BUCKEL: Marcel.

DR. REICHERT: Judd, remind me, and when was the last -- Or maybe, Genny, you know, but when was the last assessment, or what was the terminal year, is probably more relevant.

DR. CURTIS: Let me look that up, and I will get that for you.

DR. REICHERT: I am in support of this, but I'm also interested to see what the length of the additional years means for the interval between the last assessment and this one.

DR. BUCKEL: Chip, how about SAFE data? Maybe we just have a check-in and look at the SAFE data for golden.

DR. WILLIAMS: Jeff, if I could jump in, and apologies, and I actually have sort of a summary in front of me that might help, that I can quickly run over the summary for both of these assessments, because I know what terminal year was and all of that. Blueline tilefish was SEDAR 50, and the terminal year in the assessment was 2015. The model type was a production model, and the stock status is not overfished and not overfishing. That data -- The last year of useable index data is 2007 in that model, and so, if we updated that, there would be no new index data for blueline tilefish. Also, for that assessment, we were anticipating getting a reconciliation of the age data, and be able to include age data in that model. That did not occur, and so we do not have updated age information, and so the only additional information that would come to blueline tilefish would be removals, and that is it.

For tilefish, that was SEDAR 66, and the terminal year was 2018. The model type was a BAM, and the stock status is not overfished and not overfishing, and the only index in that one was we ended up actually relying more on the MARMAP longline index, and the last year of that, in the assessment, was 2016, and presumably that's not going to be updated, and what we were relying

on was having the SADL survey take over as the new fishery-independent survey for that assessment.

DR. BUCKEL: Thank you, Erik. That's very helpful. Marcel.

DR. REICHERT: Thank you, Erik, and, if I remember correctly, for tilefish, we actually had to combine years, in order to make that work, and so thanks, Erik, and that helps.

DR. WILLIAMS: Yes, and that's correct, Marcel. We did have to combine years.

DR. BUCKEL: Fred Scharf and then Chip.

DR. SCHARF: This is a question for Chip and Myra, and so, when you just presented Amendment 52, which was a response to the stock assessment for golden, SEDAR 66, not overfished and not overfishing, but it said the amendment would also respond to increased recreational effort on blueline tilefish, and the action summary is to adjust the recreational bag limit for blueline tilefish, and so could you just clarify what was in the action summary, and what is the adjustment to the bag limit for blueline in that amendment?

DR. COLLIER: The recreational fishery has been exceeding their ACL, or at least the South Atlantic recreational fishery has been exceeding their ACL for blueline tilefish, and so it's a reduction in the bag limit, down to two fish per vessel, or two fish per person. It's per person, and dropping from three, and so I will say that there's a -- In addition to what Erik has brought up, blueline tilefish is currently monitored in CHTS. There's not much of a difference between CHTS and FES, and, in all actuality, for some of these deepwater fish, when you change over from CHTS to FES, the catch goes down, and it's dealing with the other portions of the big change that has happened within the recreational survey, which is the Angler Point Intercept, and some of those weightings have changed, and that led to a decrease. That would be a potential improvement for blueline tilefish, to begin monitoring in FES.

The other part of that is it's a data-limited stock above Cape Hatteras, and that is the area where the majority of harvest has been occurring, and so, to us, that's one of the biggest concerns. If you look back at how the data stream was created for the recreational fishery, it was highly uncertain, and they used a Delphi method, in order to create the recreational data stream, and so we feel that that portion definitely needs to be updated, if there's new landings data, if there's new information that's available. When management could potentially go in place, that would be a ten-year-old stock assessment on data-limited, and so, with ACLs kind of reaching what they could sustainably harvest, there is concern there.

Then, for golden tilefish, it is an extremely important commercial fishery. There is age data, and that's been driving the stock assessment for a few years. Usually, when we get a stock assessment for golden tilefish, if you look at the selectivity, it's about an age-six or seven, and so those fish that were unknown to the model are now -- That were born at the end of the model are now available, and so I think it could be important, in order to look at how the population is doing, and maybe it's just an interim analysis, to just update the landings for something like golden tilefish, but maybe something a bit more in-depth for blueline tilefish.

DR. BUCKEL: Thank you, Chip. Genny.

DR. NESSLAGE: Those concerns all sound really valid, Chip, and I think something should be done, but I just don't -- You can't update a production model without an index, and so we would -- I guess someone, however you do it in the process, would need to request that an alternative approach be developed for blueline, in the meantime, correct, and then goldens -- If you have the age data, you could do something, but it would have to be an interim, and I wouldn't call it an update even, because -- I guess I wouldn't -- Running the BAM without an index too is -- At that point, you're just running it through basically a fancy forward-projecting VPA, and so I don't know how useful that is, but I will shut up.

DR. BUCKEL: Marcel.

DR. REICHERT: This is a different topic, and Erik mentioned the age issues, and I forgot exactly what the source of those issues were, but, with a potential delay, would it be useful to make a recommendation to look into this, especially since we will add considerable numbers of otoliths collected by SADL, and so maybe someone remembers, or Erik, or maybe Wally remembers what the issue was, but we can -- We now may have a little more time to look into that.

DR. WILLIAMS: Marcel, actually, another bit of information that I forgot to sort of mention is the Beaufort Lab, or I don't know if it's just the Beaufort Lab, and it might have been in cooperation with the Panama City Lab, but, anyway, they just got funding to do an age validation study for tilefish, blueline, snowy, and I think those are the three species they're looking at, using eye lens and bomb radiocarbon patterns, and that presumably -- I think that's funded for two years, and that would also potentially be available if we delay this, and so, yes, there's a lot of science on the horizon for this one, and so that's sort of what we're thinking about.

DR. BUCKEL: Thanks, Erik. Wally.

DR. BUBLEY: Going along with that, there's also a paper put out by someone in our lab who is doing some bomb radiocarbon stuff with otoliths previously, and I think it's in the past year that that was out there in the public.

DR. BUCKEL: That's blueline?

DR. BUBLEY: That's blueline tilefish, yes.

DR. BUCKEL: Thanks, Wally. Chip.

DR. COLLIER: Have you guys been ageing any of the fish from SADL, any of the blueline tilefish from SADL, to see how things have been going?

DR. BUBLEY: We're in the process of ageing some of them, yes.

DR. BUCKEL: So it sounds like there's not many options available to do it before the new data are available, and maybe just a health check-in with whatever -- Chip, you know what's in the SAFE report, and is there anything worth taking a look at?

DR. COLLIER: So usually we have an index of abundance that we try to supply in there, but there isn't currently one. Like Erik mentioned, I think the last one for both of them were around 2008, or 2009, and so, even despite an index of abundance the last few years, blueline tilefish was done, and that production model was done through 2016, with an index ending around 2008, or 2009, and I can't remember.

Yes, we could update the landings, and we can provide some of the economic information. I believe we have not done a fishery performance report on this in a while. Is that right, Mike? We wouldn't do it until the stock assessment was getting ready to start.

DR. SCHMIDTKE: They just did it.

DR. COLLIER: They just did it? Oh, yeah, and I just updated that one. Sorry. So, yes, we do have a new fishery performance report, and so we would put that information in there, and so the fishery performance report is, basically, we supply our advisory panel with a variety of information, and some of the landings information, the seasonality, the state, and we also have some economic information that's included in there, some of the growth information and some of the reproductive information, and that's all supplied to the advisory panel, and then they go through a list of questions that are developed by staff, and some of the questions are also provided by the assessment scientists, and that could be informed for future stock assessments. They described their vision of the -- Or how they're seeing the fishery, and so it does provide some of that feedback from the stakeholders, what they're seeing on the water right now.

DR. BUCKEL: Genny.

DR. NESSLAGE: Chip reminded me of something from the golden assessment, and I might have to eat my words, and probably upset Erik on this one, but I recall, the way the golden assessment works, you don't actually estimate recruitment in the last six or seven, or maybe eight, years of the assessment, and it's like average recruitment, and so that would mean the -- Maybe even back to 2012 catch-at-age isn't really accounted for, because of the lag between when the animals are born and when they recruit to the fishery, and so it's not like the normal assessments, where you were estimating annual recruitment each year.

There is a constraint put at the end, beginning and end, of the recruitment estimates, and so I don't know how useful it would be, or how much effort it would take to generate a catch-at-age matrix with the updated data, and just plug and chug, but not -- I don't know that we would -- That's a lot more work for the data prep people, and maybe not so much work for the assessment folks, to just plug and chug, but in case there's anything weird going on in there, like -- It might be worth looking at, but I don't know how critical it is, and have we any other indication that there are issues with, you know, year classes going through for this species?

DR. COLLIER: Given that we don't really have an index, you know, one of the benchmarks that you could potentially look at it is how quickly the commercial fishery is meeting their quota, and so that longline fishery is essentially a derby fishery, and it's been meeting it pretty quickly, and I felt like -- I don't know about this last year, and I haven't looked at it, but, in previous years, they were getting it faster and faster and faster, and so, to me, that was an indication that the population might be doing better, but, you know, that's non-analyzed, fishery-dependent data, and so I would not trust that too much.

DR. BUCKEL: Genny.

DR. NESSLAGE: Well, that gives me -- That makes me feel better, but I could see like -- I doubt that we would make a change in an ABC recommendation based on just that quick kind of an update, and so maybe it's not worth it in the end, but that's good to hear that there is no other dangerous information coming across people's desks, and so that makes me feel better, and I will take it back.

DR. BUCKEL: Thanks, Genny, and thanks, Chip. Are folks happy with what we have there? I guess one question is if we want to get some presentation in April on whatever data is available that Chip just mentioned, or just everyone is comfortable staying in a holding pattern until the -- Chip.

DR. COLLIER: I will say the Mid-Atlantic Council, who we work with in order to develop the catch levels for the north of Cape Hatteras stock, is not comfortable at all with that 2015 assessment. They want a stock assessment to go forward, and I believe their SSC also wants a stock assessment to go forward for blueline tilefish, but there might be limited information, but it's a data-limited stock.

DR. BUCKEL: So they're thinking of using a data-limited approach, like they did before, for just that area?

DR. COLLIER: So it's not they, and we're doing this all at once, and so both of them get done at the same time, the biomass model and the -- I mean, maybe the biomass model just isn't updated, but maybe the data-limited approach is, and so they would be focusing on the north of Cape Hatteras stock, and we can do the adjustments from there.

DR. BUCKEL: Marcel.

DR. REICHERT: So what you're just saying is there will be a stock assessment, with whatever method is appropriate, and that includes part, or all, of the South Atlantic stock?

DR. COLLIER: So that's where it gets confusing, right, and this is a species that has crossed the boundary, and we -- The Southeast Fisheries Science Center is the one that would be running this data-limited approach. The data-limited approach would include information from Cape Hatteras and north, because that's the way it was done the last time.

DR. REICHERT: So there is a potential that, if this -- If we agree, or if we are comfortable with the delay, it's very likely that we may be asked to reconsider the ABC for that part, because there is a new stock assessment available? Is that correct, for that part, because the Mid-Atlantic is going ahead with the stock assessment, or am I misunderstanding how this works procedurally?

DR. COLLIER: So think of this as two stock assessments that are added together to get an ABC for the Atlantic coast, and we have the data-limited approach that's used from Cape Hatteras northward, and we have the biomass model that's used south, and it's done at the same time. Basically, it was -- I wouldn't consider it one assessment, but it was used as an approach to develop an overall OFL, or there were separate OFLs between the two different -- Mike, you might have

to help me out here exactly on how this laid out, but there were two OFLs that were developed, and we separated the OFL north of Cape Hatteras into a South Atlantic and a Mid-Atlantic OFL, and we developed ABCs from there, and, in the South Atlantic, we added that ABC for the Cape Hatteras to the North Carolina-Virginia border onto the ABC for the South Atlantic part of it, the biomass model part of it, and so it's a complicated way to do it, and, Mike, if I'm wrong, let me know.

Then another piece of this is how the data was -- Or how the landings were separated, and it was based on the one-year study that was done in the Mid-Atlantic, looking at a longline survey, and so maybe we divided how much went to each region improperly, and that could be another thing that's looked at in this update, but, yes, that's all I have.

DR. BUCKEL: Marcel.

DR. REICHERT: But you just mentioned that the Mid-Atlantic is going ahead, and they're not delaying a stock assessment, if I understand you correctly, and, if I also understand you correctly, there will be a stock assessment then, or have I misunderstood what you just said?

DR. COLLIER: So we are the lead down here for, I guess, requesting the stock assessment, and you guys are indicating that you don't want it, and what I'm saying is the Mid-Atlantic Council definitely wants it. They wanted it three years ago, because, when we were looking at setting catch levels for blueline tilefish, in all actuality, the projection had ended by the time we set our -- That the council had set their catch levels, and so we're dealing with a projection that ended, I believe, in 2019, and catch levels were set in 2020, and we've been going forward on those catch levels that were recommended at that point, and so it is -- The SSC, at that point, had requested an update assessment after three years. We came back eight years later now, saying that we would like an update assessment, and now we're talking about delaying it even more.

DR. BUCKEL: I've got Fred Serchuk and then Erik Williams.

DR. SERCHUK: I have no experience with these assessments, and so my comment may be naïve, but it seems, to me, that we have some data problems. We may have some new data, and we have an assessment that is on the books that is old, and we're not really quite sure whether we have new information that could really change. It seems, to me, from my point of view, that we need to have a little workgroup between the people who have worked on this, to really find out whether it's really possible to update the assessment with any meaningful new information.

I am getting the feeling that the people that are familiar with it are saying, look, it's an old assessment, and really haven't gotten any new information, or we have a little bit more information, but clearly the people who have been working on it, the assessment people, should know whether it makes sense, and there are sufficient new data, to perform an assessment. As someone that has no involvement with the assessments, and realizing some of the constraints that have been brought up, I think a workgroup between the two councils, in terms of the people that have been involved with the assessment, is needed, to give us some indication of, if they do an assessment, what action will be done, and how much the new information will be able to inform a change in management. Thank you.

DR. BUCKEL: Thank you, Fred. Erik Williams.

DR. WILLIAMS: Fred's comments were spot-on, and, just to let you know, if we did go forward with blueline tilefish, the only new data we would have to put into this model would be removals, and that's it. That's useful, but the issue, as was outlined, is this is a complex assessment, despite being data-limited, because we have, you know, a catch-at-age model that applied to the area south of Hatteras, and we had this division of the north of that into the area that was from the South Atlantic jurisdiction and the Mid-Atlantic jurisdiction, and, again, the powerful thing that's sitting on the horizon is we actually can really improve this model by waiting, because the SADL survey runs all the way up to the North Carolina-Virginia line, and so we can do away with that little piece of the sort of stock that we've had to do some arithmetic juggling to deal with, and so there's just -- I guess the other thing I would say is, as Genny pointed out, and as I have pointed out, this is a production model.

You have no new index data coming to the table, unless you wait for the SADL survey, and so all you're doing is updating removals, and, unless those removals are radically different from what we've seen, it's not going to change the outcome, and you're going to get -- It's essentially equivalent to here's a mean estimate, and I will give you an update to that mean estimate, with very little data that's different from that mean, and it's just going to give you the same answer that we already have on the books.

I mean, I hate to predict assessment outcomes, but my inclination is that's where this one is headed, and so I think there's -- I understand the management pressure to update this one, but, really, the update isn't going to really update in the way you want it to, and, in fact, the dilemma that might be faced is you get your updated information, do something with it, and then, right about the same time that you're implementing the amendment, you're going to have all this new science come to the floor, including a new index, new survey, new age data, and all of that that is going to sort of, in some ways, potentially invalidate the assessment, or at least force the need for a quick update.

DR. BUCKEL: Thanks, Erik. Chip.

DR. COLLIER: Yes, but we just got told that we shouldn't wait on new recreational catch numbers, because we don't need -- We're not supposed to be waiting on new information, and I would argue that the stock north of Cape Hatteras -- There is a lot of concern there, and that's where the majority of harvest is coming from, and it's not just the private recreational, and it's from the charter boat fishery. We feel like that's covered pretty well, and, I mean, it's not done -- It doesn't have the same potential bias in catch estimates that the private recreational does, because it's done through a telephone survey, and it's done at the captain's level, and so the effort issue is not as substantial for that.

Once again, it's a data-limited model north of Cape Hatteras, and that's the one that I'm arguing that we probably need to be looking at more than the production model south of Cape Hatteras, and that stock -- Well, this has been a struggle to assess this blueline tilefish for a long time, but, yes, we can definitely get together with the Mid-Atlantic, and let them know about the concerns, and potentially form a working group, but I'm a bit concerned with saying we're ready to delay it right now.

DR. WILLIAMS: Yes, and, if you don't mind me chiming-in, Jeff, and I don't disagree with that. If the management concerns outweigh the concerns for potential changes due to upcoming science,

sure, that's a perfectly valid argument, and I am not arguing that. I'm just saying, in this case, there's a lot of science on the horizon that's going to radically change our view of both of these stocks, in my opinion.

DR. BUCKEL: All right. Thanks. Good discussion on golden and blueline tilefish. Any other comments? Judd and Chip, do you have what you need?

DR. COLLIER: Well, I just want the SSC to clearly write what they want up here. Is it -- Are you ready for a delay in these assessments or not? We need guidance.

DR. BUCKEL: Genny.

DR. NESSLAGE: Maybe it's terminology, in my mind, and I totally see the need for some updated information for management. Calling it an assessment maybe is what's my hang-up, and so I feel like the science that's on the horizon, or whatever, that's all -- And the new approaches that can be explored through the delayed assessments are great, and I'm looking forward to them, but, if there is an urgent management need, and it seems like there is, I would be supportive of something, but I'm not -- Maybe call it an interim analysis, and it wouldn't be using an index, like the proposed methods have been to-date, but some sort of information that could be evaluated by both SSCs and used to keep us going, in the meantime with management, and deal with some of the challenges that the councils are facing.

I would welcome that, but I just -- I think maybe I'm getting hung up on the term "assessment". An update to an assessment, and I think it's a technical thing that I'm getting hung up on. There's no point in updating a production model without survey data, and so that's where I think I'm really hung up, but, if you want to do some sort of analysis that can help update management, and respond to the current conditions that have happened, and not delay that, I'm fine with that.

DR. BUCKEL: Thanks, Genny. Judd has captured -- Or put some language there. Folks can check that out, and this is for blueline. Amy and then Marcel.

DR. SCHUELLER: I mean, I agree with what was just said by both Erik and Genny. Like the SEDAR Steering Committee is hopefully putting assessments on the schedule based on a number of factors, and like the SSC isn't necessarily the determining voice on what should be done, and we're going to provide advice based on the science, potentially, but there are a lot of factors that play into when an assessment should hit the schedule, and so I agree that, if there is a need, and another council, in collaboration with the South Atlantic Council, thinks that it's important, then it should score higher in whatever that framework -- I think we saw some framework a while ago with that, and, if it's scoring high, then put it on there.

DR. COLLIER: I mean, it's on the schedule for next year, and what we're talking about, with the Science Center, is saying maybe let's not do it. The councils are saying let's do it, and so that's where we are in this, and we're asking for guidance from the Science Center of go or no go.

DR. BUCKEL: Marcel.

DR. REICHERT: I agree with all of that, but, as you mentioned earlier, maybe an update on stocks, maybe an update on blueline tilefish, because that's what we're talking about here, and

remind me, and this was a SEDAR that included both golden and blueline? It was one SEDAR, or were they two? So it seems like blueline is the more urgent stock assessment, and so perhaps we can -- I would be comfortable with a delay of the tilefish, golden tilefish, but, because of the management needs, especially north of us, not so much with blueline, and would that help?

DR. COLLIER: Yes, and, I mean, I would say it's better than nothing, but, yes.

DR. REICHERT: And fully realizing all the caveats and the fact that, yes, we know we will get a plethora, hopefully a plethora, of new information that we can then use in the golden tilefish assessment and the South Atlantic blueline. I also realize the complication is that then that will come right on the heels of the just completed blueline tilefish stock assessment, but, as Amy said, there is apparent needs.

DR. BUCKEL: Fred Scharf.

DR. SCHARF: Chip, can you clarify, again, for me, for the blueline tilefish, you were saying there was two assessment models, and there was a production model for the South Atlantic and a data-limited approach that was used in the Mid-Atlantic? So Hatteras south is a production model, and so I'm looking at the survey data from the deepwater longline survey, and so there's a huge cluster of abundance, in that survey, you know, off of Hatteras, and those would be part of the South Atlantic's production model, and I'm not saying that those fish -- We're not using this data yet, but I'm just saying that that's where the line is, or no?

DR. COLLIER: So the line is at Cape Hatteras, and so it's going to be down at the point, and I can't remember the map, but it's going to be going straight out from east of it, and I believe that that high abundance level -- That's going to be the north of Cape Hatteras. Is that looking right to you, Fred?

DR. SCHARF: Yes, and I'm just -- I mean, it seems like, if you had a line that was sort of coming out from Cape Lookout, or Ocracoke Inlet, and, you know, all those high abundances are above that line, but I guess my question is does the Mid-Atlantic -- You're saying the Mid-Atlantic Council really wants an updated assessment done for blueline, and do they feel like -- That's a data-limited assessment they would use for that part of the stock, and do they feel like there's new data streams since the last one that's going to provide a reasonable update?

DR. COLLIER: I might be speaking out of turn in saying that they really want it, but, basically, projections ended in 2020, and they were expecting new catch levels at that point. That's how they operate up there. Down here, we do not operate as soon as projections end and we're getting new stock assessment information. That's just not how it happens, because we have a -- The Science Center down here has three councils, two commissions, and Atlantic HMS to deal with, and they're extremely taxed, and they can't get to every stock assessment in the timeframe that's needed. Yes, it might be managing expectations between the two areas, but they have been requested updated ABCs since 2020.

DR. NEER: Mr. Chair?

DR. BUCKEL: Go ahead, Julie.

DR. NEER: I just wanted to give you guys a quick just timeline of what the current schedule is for blueline tilefish. It is supposed to begin in April of 2024 and be completed in November of 2024, and so it sounds like, if we need two or three additional more years for the SADL survey to have that new index, it would be coming to you guys in late 2024, or early 2025, and it doesn't sound like we would have the SADL information until 2025, or 2026, and then have to do the assessment, and so, just so you know, it's pretty quick if you do something now for blueline, and then do it again, and there will be new information, but it's not like the same year that those things are going to be available, just as an FYI, but blueline tilefish is supposed to be completed entirely in 2024, under the current schedule. Thanks.

DR. BUCKEL: Thanks, Julie. Alexei and then Genny.

DR. SHAROV: I will let Genny go first, because she's the -- She's the wealth of knowledge on blueline tile.

DR. NESSLAGE: I know nothing about blueline, but could I just wordsmith the third bullet there on tilefish?

DR. BUCKEL: Please do.

DR. NESSLAGE: We were just -- Wally pulled up the assessment, and so I just would like to clarify, and it's not the catch-at-age that isn't accounted for, and the older fish are certainly in there through the terminal year, but the recruitment is not estimated annually since 2011, due to the structure of that model. Just I don't want to give an impression that the later years aren't included for the older fish.

DR. BUCKEL: Thanks for the correction, Genny. Mike Schmidtke.

DR. SCHMIDTKE: Thanks, and so, just coming back to Fred's question on kind of the Mid-Atlantic and what they're looking for in relation to a new assessment, I think another thing that plays a part in their desire to manage this fishery, and how they're going about doing it, is that this is a pretty newly-emergent fishery in that region. We only have catch streams going back towards kind of the 2000s or so, and there was kind of a time period, in that 2000s area, where it became much more popular, especially for the recreational, headboat, and charter type of group in that region, and so it kind of took off, and around that time of the mid-2000s is when you started having states put in regulations.

Virginia put in a landings reg, and Maryland put one in, and it kind of worked its way up that Mid-Atlantic coast, but, because of that new emergence, they are still getting a handle on what is the scale of the landings, what is the sustainable level of harvest, and so you kind of see, in the landings information that they have, kind of this ramp-up of data from that time period, and that also might be a reason why they would be looking more towards an assessment, even if it's based on limited information.

DR. BUCKEL: Thank you, Mike. Alexei.

DR. SHAROV: I think I understand the desire to wait until the survey data will accumulate, and you will have at least five years, but there is no guarantee that actually, once even this short time

series will become available, that it will have significant, important information telling us about the dynamics of the stock, and it will relate -- Even so, it will relate only to the relative changes in the most recent period, even though there are uncertainties, but, still, sort of the wealth of information is in the catch time series, the age structure, et cetera, for the full time series, and so it's not going to be linked much to the whole history of the stock exploitation, and so, for that reason, I think -- Well, given the need for the information on the status of the stock, it would seem to be reasonable not to wait until the SADL information is there.

DR. BUCKEL: Genny.

DR. NESSLAGE: Normally, I would agree with you, Alexei, but, in this case, I'm super jazzed for golden tilefish, because the new survey is going to have age information, especially for animals younger than six, and Wally just whispered that he's got down to two, and that's like gold for golden tilefish, and I am very -- The trend in the index isn't going to be informative, I agree, but that age data could help us anchor particularly those terminal years, where we're just assuming it's average recruitment in the last, what, six or seven years of the assessment, and that has always bugged me, and so I'm hopeful that the age comps from that survey will help stabilize that model and give us a little bit more -- Not that it's unstable, but to give it more information than we've ever had before, and so I'm jazzed, but --

DR. SHAROV: I was thinking, and talking, about the blueline tile for myself and not --

DR. BUCKEL: You can still be jazzed for golden tilefish, Genny. All right. Thanks, Alexei. If I've got it, the golden tilefish -- Everyone is okay for the delay to incorporate the SADL survey and age data from the SADL survey. Then, for blueline, given the management needs in the South and Mid-Atlantic, that we are requesting that -- We're not making a change to the current SEDAR schedule, and we're staying with blueline on the SEDAR schedule for 2024. Is everybody good with that language? Alexei.

DR. SHAROV: I have a question, and is the expectation there that the Mid-Atlantic data will be treated together with the South Atlantic data, and so the assessment proceeding as a single stock assessment, or is it up to the assessment committee to decide?

DR. BUCKEL: I would think that, in that data -- Well, if there's a data workshop, and it's SEDAR, and so there would be that TOR about the stock structure. Chip, chime-in.

DR. COLLIER: So that wasn't a TOR for this -- So it's an operational assessment, right, and so those are intended to be strict updates, and we had just a couple of topical working groups, and one of them was looking at age data that could be incorporated into it, and one of the important pieces of the biomass model is actually the von Bertalanffy curve, and so that could be updated with some of the information that's gained through SADL. Some of the information -- But the line would still stay at Cape Hatteras. In order to change that, I think we would have to change it to more like a benchmark assessment, where we could have a stock boundary discussion, stock ID, and work through all of that information.

DR. BUCKEL: Thanks for the clarification, Chip. Alexei.

DR. SHAROV: I am not a blueline tilefish biologist, but, as far as I remember, the general indication is that this is likely to be a single stock, and I understand that -- Well, the assessment is on schedule to start pretty soon, and so changing it to the benchmark is a big deal, but, effectively, it's coming, and, I mean, it needs to be treated this way eventually, and so I don't know if we can advise anything at this point, but it would make sense to start working towards this direction somehow, and I don't know how much the assessment update could incorporate the future fusion, but I wanted to mention that.

DR. BUCKEL: Thanks, Alexei. Chip, to that point?

DR. COLLIER: Yes, and so what I'm hearing is, you know, try to work in blueline tilefish in 2028 as a benchmark assessment, because then we would have the -- Hopefully, we can have all the ageing data worked out, and we could also have the SADL index developed, and so I think there could be a lot of information there, and I think it could be extremely valuable to do it as a benchmark in 2028.

DR. BUCKEL: Great. Excellent discussion for these two species. I think we're at a stopping point for the two tilefish species, and so the last Other Business item was black sea bass, and so, once Judd gets done typing, he's going to pull up some slides. If you remember from Tuesday, we made recommendations for black sea bass, for ABC projections and OFL projections, and Matthew Vincent made those projections, and he put the information in the tables, and he sent that to Judd. Judd is going to show those here, and I will let Judd tell you the rest of the story.

BLACK SEA BASS PROJECTIONS

DR. CURTIS: The numbers here are populated from Matt's tables in the report that corresponded with the recommendations that the SSC had made for ABC and OFL. The ABC is this corresponding Table 11 in the stock assessment report, which was using the recent recruitment, F equals P* at 30 percent of F 40 percent SPR and a discard -- F equals discard current, and then the OFL at the long-term R, F equals P rebuild at 70 percent, and the discard current value as well, which is Table 10 in the stock assessment report.

This resulted in these following numbers here, and, as you can see, there is a couple odd-looking patterns, we'll say, where, you know, overall, you have a total removals, and your OFLs are still greater than your ABCs, but the landed -- The way the yield streams are working out, the landed OFL recommendations are much lower than the ABC recommendations, which I've never seen that before.

Since then, Matt has worked on another projection that I sent around and circulated to the SSC, via email, this morning, and hopefully you've had a chance to look at that, and I think -- Matt, are you online this morning, and can you run through this document for us?

DR. VINCENT: Yes, I'm here.

DR. CURTIS: Okay. Excellent. I will just bring it up on my end over here, and you can narrate through it and just tell me when to change pages.

DR. VINCENT: Okay. Sounds good. Okay, and so the idea was to take the OFL scenario, which was the 70 percent probability of rebuilding, which set that F for the landings, and then the F for the discards is based on the current, and then we used the long-term average recruitment, and so we're going to take that scenario and then just change the recruitment to the recent average, and so we're keeping the F the same across the two different scenarios, and then just changing the recruitment to the recent average, to get the ABC.

This is your table of your landings, and you can see that it's lower, and this is for the -- This one is for the OFL, and so we would start at like 42 and then go to 75 in the next year, for the median landings, and sorry, and then we can scroll down to the next one, and that would be the table for the ABC, and you have landings for the median is 36, and then 56 in the next year, and so this will result in lower landings, and lower discards, for the time series, for the ABC than the OFL, and we thought this was potentially a way forward. If you want to look at all the -- We can go through the different figures, if you want to, but I figured that people can do that on their own, and they're the same figures as what were presented for the different scenarios, but just for this scenario, and I will open it for questions, I guess.

DR. BUCKEL: So the big change is, for the ABC, not using that F 40 percent SPR times the P*, and it's using the F rebuild 70 percent that we had recommended for the OFL on Tuesday, but we would be using that F rebuild 70 percent for F landed for the ABC as well.

DR. VINCENT: Yes, and, I guess, using the original recommended ABC, you have a different F, and a different recruitment scenario, for that one scenario, compared to the OFL, and that's why you had such different time streams of your recommended catch and your recommended discards, and so, to try to simplify it, we decided to just change the difference -- To have a difference in your recruitment levels between the OFL and the ABC.

DR. BUCKEL: Fred Serchuk.

DR. SERCHUK: Just a question, and, I mean, I'm just taken back by how large the discards are in relationship to the landings, and I have never seen something like this before, and what causes all that? I mean, the discards are very much higher than the landings, but a number of times.

DR. VINCENT: Yes, and so this goes back to the selectivity used in the yield-per-recruit curve, and, using the F 40 percent, it results in an F where you have more of the smaller, younger fish that are being caught, and then are discarded at the high F levels, and so there is less that survive to be into the landings, and so you're actually below that maximum landed yield, when you go to that F 40 percent, and so you actually have lower landings, and higher discards, based on that total yield per recruit, and I think that's Figure 3 in the original report.

DR. SERCHUK: Okay. Thank you. It's just mind-boggling, to me, that there is many times more discards for any level of landings, and it doesn't seem to be a good way to manage a fishery. Thank you.

DR. BUCKEL: Fred, part of that is, you know, these small black sea bass are in estuarine environments, in shallow-water, and folks targeting other species with bait catch these sub-legal black sea bass, in large numbers, and so it's often -- You know, there is millions of live releases of black sea bass, and hundreds of thousands of landed black sea bass. Are there other questions

on this? This is one way forward, and Chip had a few slides on another possibility that he wanted to talk to the group about, but, before we go to Chip, I want to make sure that folks understand what Judd had put in the table in our report from Matthew's report that we came in with and then what Matthew has done in the last couple of days to help us with this issue, and thank you, Matthew, for doing the runs so quickly for us.

DR. CURTIS: I think one thing also, just to keep in mind too, is, you know, we had initially only planned to look at kind of the initial projections for this meeting as well, and we still have a January meeting, where we can finalize any of these black sea bass catch level recommendations, and, if there's any other concerns from the committee, because the council is not going to see this until March.

DR. BUCKEL: All right. I don't see any hands, and so we're going to go to Chip.

DR. COLLIER: Just looking through this, council staff had some issues with the projections, and, you know, this is a new method that has been come up with for black sea bass, in order to develop projections, and so we appreciate the desire to get new estimates, but, looking at the potential impacts that could be coming out of this, they're quite severe, and so I did want to highlight the FMSY proxies are extremely high for this population.

At F 40 percent, it is 1.18, and, at F 30 percent, it is 2.11, and then, if you look at the projections over there that I just pulled out from a previous run that was included in your briefing book, that's an F at three, and that indicates that 95 percent of the age-six-plus population was removed by a hook-and-line fishery, and it just doesn't seem logical that the fishery is that efficient. They could be, but I don't know, and it doesn't seem possible.

The other thing to notice is that F at three far exceeds any F that has ever occurred in this fishery. I know we've heard, quite a bit, that the South Atlantic doesn't constrain discards, quite often. For this fishery, they did constrain the discards in the commercial fishery, by requiring a back panel for the black sea bass pot fishery, and they also constrained the black sea bass pot fishery quite a bit. They had dropped it from an unlimited number of pots down to just thirty-five pots per person, and there's only thirty-two permit holders from that, and so that pot fishery definitely reduced effort, and it likely reduced discards.

The 2022 catch estimate is similar to previous years, and so it doesn't seem like that would be driving anything down. One of the big issues is a high number of discards, and it was over eight-million. In the previous couple of years, it was around five-million, to four-million, and so that's a pretty substantial jump. That's numbers of fish, and not dead discards, and so don't get that confused.

Then, looking at recreational effort, quite often we hear that the recreational effort is unconstrained, and going up and going up, and this is -- I pulled it this morning, directly from the MRIP website, and it's looking at recreational effort. I have two different time series on there, and the blue line is all ocean trips, and that's looking at most of the trips that could occur in the ocean.

This is not trips targeting black sea bass or anything, and this is just overall all trips, and then the orange line is in federal waters. We believe most of the impact to the black sea bass fishery would

occur in federal waters, greater than three miles, and what you're seeing is a leveling-off of fishing effort, basically since 2006. There has been some cyclical pieces in there, and there was a pretty high spike in 2018, but, for the most part, in federal waters since 2018, it looks like it's not that -- Or since 2006, and it doesn't appear that there's really a trend going up or down in the recreational fishery.

Then, really, diving into some of the black sea bass population numbers and percent of encounters, what we have plotted here is number of age-one-plus fish, and that's plotted in the blue line, and you can see that crash that was observed in the stock assessment, or described in the population. However, if you look at the number of just recreational encounters, and that's the orange line, somehow, or for some reason, in 2012, there was a huge change in the percent encounters in the private recreational fishery, and this is not even including the commercial data, but you're seeing a huge jump in the percent encounters. It goes up to 0.25, with an extreme all the way up to 0.45.

These encounters don't seem that logical, and every fish is getting touched at some point, and this is for age-one-plus, and we really don't have an explanation for that. Technology did not improve that much back then, and there was a size limit change along that time period, but I don't know if that would increase the number of encounters.

You know, another component of the recreational fishery is really thinking about the headboat fishery, and that's where they would encounter quite a number of black sea bass, and release them, and they would go out fishing, potentially, in shallower waters, where smaller fish are more likely to be encountered, and a lot of those headboat operations have moved from North Carolina and South Carolina down into the Florida region, where black sea bass are less common, and so we're seeing -- We're seeing a big change here, and I don't know what the potential reasons for it are. Jeff.

DR. BUCKEL: This percent rec encounters, is that the ocean waters again, or is that the inland state --

DR. COLLIER: So, for the percent encounters, that is all fish. That is the summed-up number of fish, compared to the population, and so the N1 plus. That's the population size, and then we're talking, yes, the percent encounters from there.

DR. BUCKEL: It would be interesting to see the percent encounters in the inland waters, or maybe even the state waters, relative to where the older fish are in the greater than three miles off, to see if it's, you know, small fish, and that potentially explains some of this. Marcel.

DR. REICHERT: Can you explain what exactly percent encounters is here?

DR. COLLIER: So it's the number of fish captured in the recreational fishery compared to the number of fish in the population.

DR. REICHERT: So 45 percent means 45 percent of the population was captured at some point?

DR. COLLIER: Well, it's hard to say whether or not 45 percent of the population was captured, and it seems like -- If there were two-million fish out there, 45 percent of that two-million were -- It's estimated that they were impacted. Some fish get caught more than once, and black sea bass

likely occurs like that and so this is a rough approximation, but it definitely shows that something changed in this time period.

DR. BUCKEL: Chip, I misunderstood, and I thought these were like the creel clerks, and, of all the creel surveys, this was the percent encounters that had black sea bass, and so that wouldn't -- What you just described wouldn't make sense for inland versus -- John Carmichael has his hand up.

MR. CARMICHAEL: Thanks, and, just to clarify what this is, so this is the A, B1, and B2, the total recreational fish, that was reported in the working paper that went into the stock assessment, and so it's that number, to give the total of how many black sea bass did the program estimate that the recreational fishermen touched in a given year, and then, to get a percentage, just divide it over the one-plus population, and, you know, a lot of times, this is something, in our recreational fishery, that becomes very responsive to stock abundance, you know, and it tends to go in concert with it.

What really is odd here is just something drastically changing in this fishery here in like 2014, and it's just going to a really high encounter rate, for some reason. If that's something in the MRIP data, possibly. If that's some change in the fishery, you know, we don't know, and we really don't know of anything that's happened that, you know, could have changed the fishery. Is it something in the regulations? Is it tied to the disparate size limits that exist now? Potentially, perhaps, but it is something that certainly is likely driving what we're seeing in the terminal year, and we probably need to better understand, from just a fishery practices standpoint, to know if it's for real.

DR. BUCKEL: Fred Scharf has a question.

DR. SCHARF: So I'm just trying to understand what you're saying, and so this is the proportion of the population that is encountered recreationally, and so, if I understand this right, you know, I mean, if you have a population that's declining, because of poor recruitment, and, if you have the same number of hooks in the water, by definition, a higher percentage is going to be encountered, and so I'm not really sure why this -- Unless I'm not understanding the data right, but, if you have -- You know, if all else is being equal, and you just showed that effort was flat, then a higher fraction of the fish are going to be encountered by the hooks that are in the water, and there's less fish out there, and so, if the same number of fish are being encountered, that's a higher percentage of the size of the stock, if the stock is smaller.

DR. BUCKEL: Alexei.

DR. SHAROV: I follow Fred's argument, but, to be honest, thinking that 45 percent of the population could have been handled by fishermen is unrealistic, and certainly I agree with Chip that high Fs, of, you know, two or three, and that's where the fully -- That's a full F, and so it applies to the older ages, and it's, in itself, unrealistic, but, if F corresponds to only killed fish, and there is still a large number of discards that were caught and released and stayed alive, and so, essentially, for those groups of fish, for the older fish, we would be saying that 99 percent of those age groups were handled by humans. That is really -- It's not feeding any reasonable assumptions, of course, and that is a concern.

DR. BUCKEL: As Chip mentioned, these fish get caught multiple times, and so it's not necessarily the -- So that adds to that number. Matthew and then John.

DR. VINCENT: You mentioned that there was a size change in 2013, and wasn't there also a bag limit change that increased in 2013, and so -- We talked, earlier in the meeting, about not understanding how psychologically recreational fishermen react to different changes, and I'm just curious if that could potentially explain -- Maybe the increase in bag limit and there being not many other species that have a large ability to catch, and I guess I'm thinking red snapper has the closed season, and maybe it just made black sea bass a target for the recreational fishery, starting at that time.

DR. COLLIER: Thank you for that, and we can definitely look into how the number of discards per trip were changing over this time period, and where they were occurring as well, and so I think both of those could be informative.

DR. BUCKEL: John is next, John Carmichael.

MR. CARMICHAEL: Thanks, Jeff, and then, to Fred's point, the actual total number of A, B1, and B2 has been declining a bit. The peak occurred really from 2014 to 2017, and it has kind of dropped off, and so that's one reason that it's interesting that, you know, this fishery sort of went from a period where, you know, if you looked at the earlier years, it was encountering 5 or 10 percent, at best, which kind of makes sense, to suddenly encountering, you know, twenty-five and more, and then sort of staying up there, and so it just seems like there's something happening that we need to understand, and, as Matt said, I think it's tied probably to the size limit, to the increase in bag limit, putting people out there to go fishing, but we also have the change in the FES, which we've talked about, and know that's a possibility, and that has tended to have -- It tended, at least when it first was done, to have a really big increase in the perceived effort in the inshore areas, and so that could be part of this as well.

DR. BUCKEL: Thanks, John. Fred Serchuk.

DR. SERCHUK: Thank you, Chair. This gets back to my comment on the discards, and I think -- I don't know whether the assessment report points this out, but, if what I understand is that most of the discards are discarded live, and then I think that needs to be provided, because there are many cases where most of the discards are dead, and that's what really threw me off, is the large number of discards, and I'm thinking, well, gee whiz, to retain a fish, and then to see that the landings themselves are a very small portion of the total fish caught, that most of them are dead, and I just thought that was very inefficient, and now what I understand is, no, wait a second, and it's not inefficient, to the extent that most of the discards are returned live, and they often can be caught many times after that return live, and that's very different than many other fisheries, and so I hope that that's noted, in bold letters, in the projections. Thank you.

DR. COLLIER: Thanks for that, Fred, and the numbers that are reported in your table that Matt provided -- Those are dead discards, and so, yes, the number of discards is quite a bit larger. For the recreational fishery, the private recreational fishery, I believe it was a 13.7 discard mortality rate that was used in the stock assessment, and then, for the headboat, it was 15.2, and so a lot of them are released alive.

The other thing that was just pointed out was the regulation changes for black sea bass, and it actually -- In 2013, it decreased from a fifteen-fish bag limit to a five-fish bag limit, and then in 2018 is when it increased from a five-fish bag limit up to a seven-fish bag limit.

DR. BUCKEL: Chip, did you have any more? Go for it.

DR. COLLIER: I just wanted to remind you of the modeling that was done for yellowmouth, scamp and yellowmouth, and this was presented to the SSC in July of 2023, and, basically, when you're not certain about what the overfished status is, or where to rebuild to, potential options to help rebuild the stock, and so this was provided as an example for scamp. At F equals 75 percent F 40 percent SPR, the stock does rebuild to the biomass level that would be associated with 40 percent, without knowing the biomass levels, and so, whatever recruitment happens to be, it can achieve -- It can rebuild to those population levels, and so, similar to scamp, black sea bass are an overfished stock with unknown productivity.

Neither stock were experiencing overfishing, and so it seems like this could be an approach to use for black sea bass, saying we're not certain what we're going to rebuild to, and basically saying the overfished condition is unknown, but constraining harvest, to maybe something like F 75 percent, as provided in this example, and it doesn't have to be this, but this would be an option, going forward.

DR. SCHARF: Can you define high, mean, mid, and low recruitment?

DR. COLLIER: I cannot, and so this was just a range of recruitments that I think were suspected for scamp, and this was -- We didn't do this analysis, and so this was provided to you guys from the Science Center, back in July.

DR. SCHARF: So this isn't sea bass data, and this is --

DR. COLLIER: This is scamp data, but it was basically showing that the level of -- Even if you don't know the level of productivity, if you constrain harvest to that F at 75 percent F 40 percent SPR, the population would recover to whatever population benchmark was potentially out there, and it's basically saying we have an unknown -- We have an unknown MSY, but the population will rebuild to it if you constrain the F. I see there are some headaches from this. I didn't do the analysis, and, I mean, if there's questions, and please throw them out there and say you're an idiot for using this, and I have no problem with it.

DR. SCHARF: No, and I'm just wondering, and you're presenting this an example of using F that's 75 percent of the F that would achieve 40 percent SPR, and the projections that we've been provided for sea bass are using F that is the one that gets us to the 70 percent probability of rebuild, right, and so it's also a constrained F, and so, in the case of black sea bass, how would this F, that you're throwing out there as a possibility, compare to the one that we have?

DR. COLLIER: I am not exactly certain how it would compare to the one that's been provided to you in the tables. Some of the issues with it is we don't know productivity for this stock. It's been declining since -- I think the recruitment has been declining since 2009.

If you look at the recruitment levels in the stock assessment, and then, if you look at the index, based on the chevron trap data, it's either 2011 or 2012 that we've been seeing continual declines in that population, and so I don't know what we should expect this population to rebuild to, but I think rebuilding to that previous MSY value is probably not likely, but I don't know if there's any science to guide where this is going. One of my biggest concerns for this population has been the continual decline in this population, and I think we need more regular updates, as opposed to relying on projections for a long period of time.

DR. BUCKEL: Chip, I agree with that, that regular check-ins, every couple of years, like you've mentioned, would be good, given that the index tracks very well in the assessment. Matthew Vincent.

DR. VINCENT: I was just going to say that I don't think we can make statements about whether or not the population can rebuild, and you're implicitly assuming that there is a regime change that has occurred, and we have stated, in the assessment document, that there is not sufficient evidence to make that conclusion, and so I'm not sure where those statements come from, and so I don't think we can automatically switch to we can't rebuild the population, based on the evidence that is available, and so I'm putting that on the record, that I don't think those statements were actually correct.

DR. BUCKEL: Chip, did you have other slides?

DR. COLLIER: Well, just to put my two-cents in there, I disagree with using the Klaer et al. paper as a potential method for doing it. It was done with just seven stocks, and there wasn't a natural cutoff for it. There has been plenty of information provided, down here in the South Atlantic, that things are changing. We're looking at scamp, gag grouper, black sea bass, snowy grouper, red grouper, all of which have reduced recruitment over the past ten years.

There is papers out there right now saying that the Gulf Stream is slowing down, and there's other papers showing that there has been changes in shrimp populations, and all kinds of things are changing, and it is not a static environment, and to put our head in the sand and say that things aren't changing, and we don't have enough information, by just looking at black sea bass data, I don't know, and there are other ways to look at this.

I know that Carolyn has mentioned looking at sigma-six, and, you know, looking at types of productivity information, and where do these things break apart? Where do these indices break apart, and how can you detect it other ways? We relied on one, and that has an extreme amount of subjectivity to it, and one of the biggest issues that I have with the Klaer et al. paper is, when you're uncertain, the value goes to zero. It gives you no credit for what could potentially be happening in the fishery.

To me, I think there's anecdotal evidence that things are happening. Unless you have direct information on what is driving it, and I don't know if we'll ever get to that kind of information in the South Atlantic region. We are data-limited, and we are struggling to get surveys for juvenile fish, and I know that South Carolina DNR is working on some of that information, but I don't -- Sorry for going on a soapbox, but things are changing in the South Atlantic, and I don't know if we can keep our heads in the sand anymore, saying that there is no longer a regime shift.

DR. BUCKEL: All right. I don't want to get into the discussion of the regime shift. We've been there before, and so we have fifteen minutes left before our meeting ends, and I don't think we have the time to decide on what to use for black sea bass, and so we're going to -- We have the January webinar, and that was our plan, to tackle the ABC for black sea bass, and so what -- I would like to talk about what we want to see at that January webinar, in order to make that decision, or in order to be able to set an ABC and an OFL, given that we only have fifteen minutes in this meeting. Erik Williams, go ahead.

DR. WILLIAMS: Sorry, Jeff, but I feel like I have to say something, just in terms of, you know, maintaining the scientific integrity of the SSC and the whole process. I understand what Chip is presenting here, but let's -- I just want to make sure that everybody is understanding what context this was brought in, and how it was brought in, and whether it was part of the agenda, et cetera, et cetera, and let's be careful of our process here. I'm fine with alternate science coming to the table, but let's make sure it's, you know, scrutinized and evaluated in the same way that everything else is, and just be careful here. Thank you.

DR. BUCKEL: Thank you, Erik. I think this approach -- We used this for scamp, which, as Chip mentioned, is a similar -- Now black sea bass are falling to -- At least the status of the stock is similar, and the uncertainty in what recruitment we're going to see, and so there's that precedent, right, for using the 75 percent F 40 percent SPR, but we also have the projections that Matthew Vincent has provided. Are there other things that you would like to see, at the January webinar, to help in setting ABC for black sea bass? Genny has got a tentative hand up.

DR. NESSLAGE: I am still staring at Matt's Slide 13 and the having this at the max rate for the fishery to five, and I thought you said that you had played around with different values for constraining that, and the workgroup had settled on this, and is that correct? Sorry, and that was a question to Matt, the fitting to landings and discards, where the max rate of the fishery was set to five, that one, and it kind of gets at the heart of our discussions earlier this week about whether the model is actually able to reconcile the high landings with the small population at-age in those last few years, and I'm still a little concerned about the performance of that model in that area, and I was wondering -- I thought I remember you saying that alternative values were explored, and is that something that can be revisited and presented in more detail to us?

DR. BUCKEL: Go ahead, Matthew.

DR. WILLIAMS: This is Erik. Matt texted me and said his audio is not working, for some reason, and so I will attempt to answer it. I think this is an issue with the assessment, that we haven't been able to understand what's going on either, and that is -- You know, we brought in the 2022 estimates, and it looks like they were higher than the previous years at the end of the assessment term, and trying to reconcile that is a bit tricky. I mean, they did go up, and the stock is at a very low status at the very end of the assessment, and the question is does that mean that the assessment is biased, because of the one additional year having a spiking F? I mean, we've seen this in other stocks, and the only thing I would say is, you know, that full F is for ages -- It's basically ages-seven, or six-plus, and, at the other ages, the Fs are still relatively low.

Again, I mean, Genny, you're as aware as anybody of the dynamics of these stock assessments, and you have a declining stock, and then you add in some landings that are suddenly higher than what we've seen recently, and then, of course, the model doesn't know how to react to that. It

may be, you know, that one thing to think about is, had we had that 2022 data in the assessment, as the terminal year, what would the model have done, and it might have done something different with that.

That is an issue, and the question is how do we reconcile that in a projection format, and I am open to any ideas on that, because it does sort of induce a sort of, you know, hiccup, of sorts, into the projections that was sort of unanticipated. I mean, one thing we could do is just ignore the 2022 and say, okay, we're going with F current, recognizing that the 2022 data suggested the landings were higher, but we're going to ignore that and just go with F current, and then that would reduce that short of shock into the system.

DR. BUCKEL: I see Alexei nodding his head, and Genny nodding her head. Alexei, go ahead.

DR. SHAROV: Yes, and I agree with Erik. It would seem to be, you know, quite a reasonable idea, because you are essentially making this connection between the assessment and the projection, or this first year is very -- Like Erik said, and there's a high estimate of the harvest, with a low estimate of the population size, and so this is a hiccup. It's not the best solution, but I think a potentially reasonable one, in this situation.

DR. BUCKEL: Thanks, Alexei. Matthew, go ahead.

DR. VINCENT: I was just going to try to respond, and Erik did a good job. I was just going to say that the original limit was set at ten, but then I think this was set -- It was intended to be an overall F, and so I reduced it to be five for each individual fishery, so that you wouldn't have -- Because, in some scenarios, if it set it at ten for each fishery, the overall F would be like fifteen or twenty, and so I reduced it down to five, to keep it within a reasonable level, or a somewhat reasonable level, but Erik did a good job of explaining why you're seeing it, and it's pretty much because there aren't any older fish, because recruitment has been estimated to be so low, for so long, and there is no longer any large fish to be able to meet the landings that we're seeing in the recreational fishery.

DR. BUCKEL: Thank you, Matthew. Genny.

DR. NESSLAGE: Right, which doesn't make sense, right, or is it all -- The landings, as I recall -- I am having a blue screen of death here, which is part of the reason why you're seeing some strange faces from me, and so I can't pull it up right now, but there's some disconnect. If the landings are still high, and those are real, and not an MRIP bias of some sort, then there is either recruitment coming from somewhere, right, because it's mostly, as I recall in your BAM plots --

It's mostly ages-one, zero and one, or just one, and there was just a big, red bar, and so these animals are coming from somewhere, but the model is estimating no recruitment, and so there's something going on here that seems odd, and so I suspect MRIP estimates, perhaps, of being the most -- I don't know, and I shouldn't suspect anything, but there's something going on here that there's a disconnect, that probably needs to be looked at, but I liked Erik's suggestion for the temporary fix, going forward, and I would love to see that for the January meeting.

Just to something that Chip said earlier about, you know, regime shifts and whatnot, there may be a regime shift to low recruitment for many species, but that doesn't mean we can allow harvest to

continue, and that's the sad part of it all. It's not necessarily -- Even if it's not the fishery's fault, and so I just want to keep that in mind as we go forward.

DR. BUCKEL: Matthew, what's the last year? Remind us of the last year that you have an estimate of recruitment.

DR. VINCENT: It's 2019 is the last year that estimates recruitment, and then 2020 and 2021 are set at the average from 2014 to 2019.

DR. BUCKEL: Thank you.

DR. VINCENT: I would say that I did notice, in the presentation about the MRIP, that I think the Florida -- I think he presented the black sea bass, and the Florida estimate for 2022 had a 50 percent SE, and so your concern that maybe the MRIP has an issue in that year may be not unfounded.

DR. BUCKEL: Okay, and so we've got a request for -- Instead of the fitting to the landings, to use an F current for that 2022. Any other requests of Matthew? Any other questions, or comments, about setting the ABC for black sea bass? Anything online?

DR. CURTIS: No.

CONSENSUS STATEMENTS AND RECOMMENDATIONS REVIEW

DR. BUCKEL: All right, and so we have a path forward for our January webinar to set the black sea bass ABC. Thank you, Matthew and Erik, for hanging around and helping us with this item. The next agenda item is Number 17, Public Comment, and so one final opportunity to comment on SSC recommendations and agenda items. All right. No hands from the public, and so we'll move on to Agenda Item 18, our consensus statements and recommendations.

Fred and I talked to ExCom, and we usually -- When we do the scrolling through, we rarely get any input, and so I think folks are fairly -- You know, they're usually burnt out by this time, and so we're going to just ask you to work on -- When you get the draft sent to you, to do your wordsmithing at that point, and the final report is due to the council by noon on Friday, November 17, and so I will send the draft to you, hopefully by the end of this week, and then ask for it to be back that week before, and so sometime around the 8th, 9th, or 10th, so I have time to incorporate edits and get the final report to Judd. Judd, go ahead.

DR. CURTIS: I think, procedurally, if you can send your notes, and things that you've put together during this week, to me, and then I will synthesize those things, and try to avoid any redundancies and such, and then send those to Jeff, and then he can submit to the whole committee, once he's had a chance to review it, and then for kind of final edits and review, so that we get it back before Friday, November 17, if that sounds good to everyone.

DR. BUCKEL: Yes, and so that timeline will be a little -- You will get the draft, and it will be sometime hopefully by the end of next week, by the time that Judd incorporates folks' notes, and thank you. This meeting was great, and folks took excellent notes, and sent them to Judd and me, and so we really appreciate the note-takers. That helps to flesh-out the report. Any questions on

that, on the report? All right. Then we'll move on to Agenda Item 19, the Next Meetings. Judd, did you want to walk us through that?

NEXT MEETINGS

DR. CURTIS: Yes, and so we're set up for a January/February webinar, and that will be TBD, and we will work with ExCom to schedule that, and we usually have that kind of the last week of January or first week of February, and we'll see what the ExCom comes up with, and then I will let people know. That will be a chance to review any final projection runs for black sea bass and any other business that comes before the committee after the council meeting in December, or other sources.

One slight curveball that we've got is we've typically had the April SSC meeting in that third week, that 15th to the 18th, and all the hotels are currently booked-up for that week, and so our travel coordinator, Michele, is having a really tough time finding anything available for that week, and so we're looking at potentially the week before, the April 8th through 11th, as a fallback week for the SSC meeting, and that would be joint with the SEP as well. The SEP would come in, and Jennifer is shaking her head, and that's not going to work? Okay.

Well, we're a little bit at the mercy of hotel availability right now, but I guess maybe one option is -- You know, she had also looked into the following week, which would be the 22nd to the 25th, and that's starting to creep around kind of finals week, I know for a lot of the academics, and so I had suggested that the week before was better, but maybe this is some input that we can provide her now, for that April 8th to 11th or the week following, which would be the 22nd to the 25th, would be better.

DR. SERCHUK: When will the decision be made on the April meeting?

DR. CURTIS: Sorry, Fred, but can you repeat that?

DR. SERCHUK: Yes, and when do you expect that decisions will be made regarding what are the dates for the April meeting?

DR. CURTIS: Hopefully within the next month or so, once we get final availability indicated from the hotels. Hopefully within the next two weeks.

DR. SERCHUK: Okay. Good. Great. Thank you very much for that.

DR. CURTIS: Any other opinions on dates? Alexei.

DR. SHAROV: I am just curious, and you bounded to Charleston proper? I mean, theoretically, there are other cites that could be much cheaper to hold a meeting, but it's certainly not our -- It's not our decision, but I'm just curious as to -- You know, considering the difficulty of finding a hotel.

DR. CURTIS: That's something to consider with senior staff. You know, we've always had it in Charleston, because of budgetary costs, and so that will all have to be kind of looked at, but I will bring that up to senior staff and our travel coordinator to discuss.

DR. BUCKEL: All right. Anything else, Judd?

DR. CURTIS: No, and that's it. Okay. Thanks, and so I guess stay-tuned, and we'll kind of let you know, in the next couple of weeks, what type of availability we have in Charleston, or if there's another town that might be an option, and try to nail down some of those dates for the April meeting in advance, as well as the January-February webinar.

DR. BUCKEL: Excellent. Thanks so much, Judd. Thanks to all of the SSC members for a job well done this week. We had a lot of items, and I feel really good about where the text is on each of the agenda items, and thanks again for taking excellent notes. I would thank you, Judd, for taking notes during the meeting, while simultaneously monitoring the webinar and other items, and I also appreciate that you organize all the agenda overview and all the documents. Fred Serchuk, did you have something, or is that a leftover hand?

DR. SERCHUK: No, and I just wanted to thank you, Chair, for all your patience during this week. Thank you.

DR. BUCKEL: Thanks, Fred. I also want to thank council staff, SEDAR staff, Southeast Fisheries Science Center staff, for all the help this week, and presentations, and thanks, Carolyn, for being here. We appreciate the council members, when they can be here, and thanks to Shep Grimes, NOAA legal counsel, for helping us out, particularly with BSIA. All right, and I think, with that, we will adjourn our October 2023 SSC meeting. Thanks again, everyone.

(Whereupon, the meeting adjourned on October 26, 2023.)

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Attendee Report: Scientific & Statistical Committee Meeting (October 24-26, 2023)

Report Generated:
10/26/2023 01:17 PM EDT

Webinar ID	Actual Start Date/Time	Duration	# Registered	# Attended
589-283-267	10/24/2023 07:04 AM EDT	10 hours 8 minutes	91	67

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Report Generated:
10/26/2023 01:18 PM EDT

Webinar ID	Actual Start Date/Time	Duration	# Registered	# Attended
589-283-267	10/25/2023 07:09 AM EDT	10 hours 41 minutes	107	69

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Attendee Report: Scientific & Statistical Committee Meeting (October 24-26, 2023)

Report Generated:
10/26/2023 01:19 PM EDT

Webinar ID	Actual Start Date/Time	Duration	# Registered	# Attended
589-283-267	10/26/2023 07:05 AM EDT	4 hours 60 minutes	115	61

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