# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

## SCIENTIFIC AND STATISTICAL COMMITTEE

**Webinar**

**February 9, 2024**

**Transcript**

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**Attendees and Invited Participants**

Rick DeVictor
Shep Grimes
Martha Guyas
Frank Helies
Dominique Lazarre
Nikhil Mehta
Genny Nesslage
Christina Package-Ward
Kevin Spanik

**Observers and Participants**

Other observers and participants attached.

The Scientific and Statistical Committee of the South Atlantic Fishery Management Council convened via webinar on February 9, 2024, and was called to order by Dr. Jeff Buckel.

## INTRODUCTIONS

DR. BUCKEL: Good morning, everyone, and welcome to the February 2024 South Atlantic Fishery Management Council SSC webinar. My name is Jeff Buckel, and I'll be chairing today's meeting. Along with Vice Chair Fred Scharf, we thank you all for attending the webinar, and we have a new member of the SSC, Jim Gartland, and, Jim, if you could give us a quick introduction. Sorry to put you on the spot.

MR. GARTLAND: No, that's perfectly fine. Well, first of all, thank you all very much for having me. As you said, my name is Jim Gartland. I'm an Associate Research Scientist up at the Virginia Institute of Marine Science. A lot of my work has been in the Northeast, and so it's weird for me to say up at VIMS, but, anyway, I've been here since 1999.

I kind of built my career here on developing fishery-independent monitoring surveys, and we started the ChesMMAP survey in Chesapeake Bay, and we run the NEAMAP survey in the Northeast, which is kind of the Northeast brother or sister or whatever you want to call it to the SEAMAP surveys, and then we've also, over the years, acquired some additional surveys, including the longline survey that Jack Musick started back in the 1970s.

On top of that, around 2015, I kind of transitioned my career to more of an analytical one, and, at the same time, I went back to school, and so, in addition to being an employee, I'm also a part-time PhD student, and I hope to be finishing up in either late spring or early summer of this year, and so that's me, and, again, thank you all very much for having me.

DR. BUCKEL: Thank you, Jim. We look forward to working with you on the SSC. All right. Other introductions, I just want to recognize that we've got some council members present, our liaison, Carolyn Belcher, and, Carolyn, thanks for attending, and I see Trish Murphey is also on here. Thanks, Trish, and, if I missed any council members, sorry, and the list on the webinar of attendees is long.

Also, I have Shannon Calay, as our Southeast Fisheries Science Center rep, and Matt Vincent is on, and he'll be talking here in a little bit about black sea bass, and so thank you both for attending, and then, from NOAA General Counsel, Shep Grimes is here, and so thanks, Shep. Thank you all in advance for your help with our meeting today. The first item on the agenda is Attachment 1a, and that is the agenda. Are there any agenda changes that folks see, or any issues with the agenda? If you see any, please raise your hand.

DR. CURTIS: Just one thing to note, and we added a couple of items into the Other Business that aren't reflected on the agenda, but they are captured in the overview document, the revised overview document, that we sent, and, also, for those of you that downloaded the briefing book early on, when it was first posted, there were a couple of revised documents submitted in the middle of last week that had a couple of corrections of typos for the black sea bass assessment review, and that was Attachment 3a and Attachment 3b. Thanks, Jeff.

DR. BUCKEL: Thank you, Judd, and so those -- We should not -- Are the corrected versions in 3a and 3b or are they in 3b and 3e?

DR. CURTIS: The 3a and 3b are the revised documents that had been submitted. 3d and 3e are also late additions, just as supplementary materials. Those two documents had already been reviewed by the SSC, in October, and one was a document that Matt had provided with updated base run specifications and projections, and then we had asked him to produce another run of projections mid-meeting, and he was able to do so, and that's what the other document encapsulates.

DR. BUCKEL: Thanks, Judd. Any hands raised on the agenda?

DR. CURTIS: I see none.

DR. BUCKEL: All right. Seeing no hands raised, the agenda is approved, and the next item on the agenda are our minutes from our October 2023 SSC meeting, and those are in Attachment 1b. Does anyone have any edits to the minutes from the October meeting?

DR. CURTIS: Shep has his hand raised.

DR. BUCKEL: Go ahead.

MR. GRIMES: Thank you, Mr. Chair. I would just note that I had two small edits, and I emailed those to Judd, and he will make them, I presume. Thank you.

DR. BUCKEL: Thanks, Shep. I appreciate you taking a look at that and correcting the errors. Anyone else?

DR. CURTIS: No other hands, Chair.

DR. BUCKEL: All right, and so we will consider the October 2023 SSC meeting minutes approved, and I think next up is public comment, but, Judd, did you have anything else that you wanted to cover before then?

DR. CURTIS: No, Chair, and we can move into public comment.

DR. BUCKEL: Okay. I just looked, and I think I saw that you were looking too, and I didn't see any public comment, as of ten minutes ago, on the online, on the website, and, if that hasn't changed, then we'll move to asking any public that's here on the webinar to please raise your hand if you would like to comment. All right. It looks like no hands for public comment, Judd. Thanks for monitoring that. Is that Chip or Judd monitoring the hands?

DR. CURTIS: A little of both.

## SEDAR 76: BLACK SEA BASS OPERATIONAL ASSESSMENT

DR. BUCKEL: All right. Well, thank you both. Okay, and so the next item is Agenda Item Number 3, SEDAR 76 Black Sea Bass Operational Assessment. Before we get into that, I just want to remind folks to -- I didn't do any assignments for the topics today, but if everyone can take notes, and then you can refer back to those when we're fleshing out the notes that we put into our responses today, and so it's always good to have that collective brain of all SSC members to help get our notes correct, and our responses to the action items as thorough as possible, and so I appreciate, in advance, you taking notes as we discuss the items today.

First up is SEDAR 76, and we've got a presentation from Matthew Vincent, but, before Matt starts, just to remind folks that we've seen this several times, in the April, July, and October meetings, and I think my hope was that, at the October 2023 meeting, we would have been able to make our catch recommendations, and fill out the table, but, if you recall, we had an issue with the ABC values relative to the OFL values that were -- It didn't make a lot of sense to move forward with those, and so we asked for other projections, and Matthew has been kind enough to provide those for us, and those are in the Attachment 3a and 3b.

Our action items are to fill out the catch table, or review these projections, characterize any uncertainties, and then fill out the catch table below, that Table 1, either using the projections or some other method that we choose, but this has been going through, I will remind you, a workgroup to decide on how to move forward with both the ABC and OFL, and so we've come down a pretty good path to get to where we are today, with a lot of vetting, and so, with that, I will let Matt get the presentation on, and we'll hear from him on the outcomes of those projections. Thanks, Matt.

DR. CURTIS: Matt, I'm going to go ahead and make you the presenter, so that you can run the show.

DR. VINCENT: Okay. Sounds good. Welcome, everybody. I'm going to try to keep this shorter than previous presentations, since, like Jeff has said, we've been over this a couple of times, and I'll just give a quick recap of where we were at at the last SSC, which I think was in October, and so we had proposed a bunch of different scenarios, and we kind of whittled it down to using a scenario for the ABC where it assumed the recent mean recruitment and then the discards were calculated based on the fishing mortality at the average of the last three years of the assessment multiplied by the weighted selectivity for that same time period, but then the landings fishing mortality was calculated as the P* times F 40 percent, and then the OFL scenario was determined using long-term recruitment with an F for the landings that gave a 70 percent probability of rebuilding, but the F on the discards was the same as what I described for the ABC.

However, we discovered that, for the OFL scenario, it was greater than the -- Or the ABC scenario was greater than the OFL scenario in some of the years, and this didn't really make sense, and so we kind of went back to the drawing boards, and we decided that the OFL scenario should remain as previously described, but we changed the ABC scenario so that it retained the same fishing mortality, both on the landings and the discards as in the OFL scenario, but we changed the recruitment to be the recent mean recruitment, which was determined from the average of 2014 through 2019.

In the projections that we described in October, there was some concerns that the Fs in 2022 that were the result of fitting to the observed landings and discards were too high, because the estimates of F were greater than three, which gives a very high removal rate from the population, which

some people thought was unreasonable, and, in the stochastic projections, the median F for those was a median of 2.3, and it had a 95 percent confidence interval of anywhere from 0.5 all the way up to 7.5, which is an astronomically-high level.

The SSC recommended to use the same methodology as had previously been presented, except, instead of fitting the 2022 landings and discards, to just use the average F from 2019 to 2021, and so we'll be using the same F in 2022 as had previously been used in 2023 and 2024, and so this gives us an OFL scenario where we have the fishing mortality and the landings that's determined by iteratively solving such that it gives a 70 percent probability that the population rebuilds within ten years, assuming that the fishing mortality on the discards is the recent fishing mortality times that discard selectivity and the long-term average recruitment. The ABC scenario has the same fishing mortalities, but it assumes the lower recent recruitment scenario.

On to the results for the OFL scenario, and we can see that we don't have the unreasonably-high estimates of fishing mortality, but the F in 2022 through 2024 is assumed to be the same average, which this may under -- It's likely to underestimate the actual fishing mortality, and it won't match with the discards and landings, and future assessments might end up estimating a spawning stock that ends up being lower than these projections.

As you can see, the spawning stock is able to rebuild within the ten-year time period, and it seems to rebound quite quickly, and this is a result of the very wide range in the recruits in the bottom-left. If we go up to the middle-right panel, you can see that the removals are drastically reduced in 2025, down to I think it's like 20,000 pounds, or something like that, and then they gradually increase. You can see that the discards are somewhat reduced, but they actually go to a higher level, and are actually an order of magnitude larger than the landings, and this is a result of using the F over time, and, as the stock rebuilds, the population -- Or the discards actually go up quite a bit.

On the left panel, or in the left figure, this figure shows the probability of rebuilding to above the F 40 percent, and we can see that it reaches 70 percent of the stochastic projections within the ten years after the beginning of the management intervention, which is in 2025, and then, on the right, you can see the predicted survey, and you can see there's quite a wide range, or quite a large amount of uncertainty, in those projections.

This is the table, which you can draw your management figures, and so the one thing that I would note is that the landings are less than an order of magnitude smaller than the discards, in terms of numbers, and, if you look in terms of weight, the discards are three-times as large as the landings, the overall scenario, and this is based on the assumed selectivity and the ratio of assuming the higher discard mortality and using the lower fishing mortality for the landings that allows for the rebuilding scenario.

Now on to the ABC scenario, and we can see that the fishing mortality is the same as previously, but it's over a shorter time period, and we can see that the spawning stock does not increase quite as rapidly as in the previous scenario, and this is due to the much lower variability in recruits, and it's, like I said, the average of 2014 through 2019, and so, overall, we have lower discards, compared to the previous scenario, and they remain at a fairly constantly level, and the removals -- We can see that there is a gradual decline in the interim period, and then they're reduced in 2025, as a result of that management interaction.

Then this slide shows the probability of rebuilding, and, as you can see, there is no chance that it's going to rebuild within five years in the recent recruitment, and the survey predictions don't show it increasing quite as a large, as a result of the lower recruitment in the interim period.

On to the table, which you can draw the results from, and these look about the same, where you have over more than an order of magnitude difference between your landings, in numbers, here compared to your discards over here, and it's almost two orders of magnitude smaller, and this is your landings, or your landings in weight, compared to your discards in weight, and that is about an order of magnitude smaller.

The other thing that I tested, just out of curiosity, was to create a scenario where I fit the 2022 landings data in the BAM model, and so we extended the last year of the assessment to 2022, and just put in landings in that last year, and so there's no age comps or indices or anything like that, and I wanted to compare it to what the estimates were from the projections that fit to those landings. As you can see, the spawning stock biomass is like almost identical for the entire time series, and it just projects on into 2021.

The fishing mortality is also almost identical, and it increases quite dramatically, and I think it's almost exactly the same as the base case projection, deterministic projection, scenario, and so I just did this to double-check, to make sure, that the coding for fitting to that 2022 year were accurate, given that it was new code that I had written, and it seems like it is somewhat -- It's reasonable, given that BAM is estimating the same sorts of Fs in that terminal year, with those high Fs, and I think this is a result of the population being so low, and then the landings in 2022 are still at the same high level as in 2021 and the discards actually increase a little bit, I think, compared to 2021, and so, to remain at those high Fs, or to remain at those high catches, the F has to go up, in order to obtain them in the stock assessment. Sorry that I didn't include this slide in the original presentation that I sent to the SSC, but it is in the report, and so now I'll open it up to questions.

DR. BUCKEL: Thanks very much, Matt, for running new projections, and I especially like the survey predictions, and thanks for taking the time to do those. Those will be helpful as we monitor how the rebuilding is progressing. I just wanted to clarify that the ABC and the OFL are identical to what we saw in October, with the exception that the ABC -- Instead of using the landings scenario of P* F 40 percent, now the landings scenario is that 70 percent rebuild, and so that's the difference, and so the ABC that we saw in October had the recent recruitment in there, and I just wanted to clarify that. Then I also had a question on your Slide 4 and Slide 7, and so the -- On the right-hand column, the middle, that has the label of "projection removals", that's projections landings, right? I just wanted to double-check, and the Y-axis says "landings".

DR. VINCENT: Yes, and those are the landings, the directed landings, yes.

DR. BUCKEL: Yes, and I just wanted to -- We often use "removals" as landings plus dead discards, and so I just wanted to make sure that folks knew that was the landings there.

DR. VINCENT: Jeff, can I add a quick comment about those, the survey projections? That survey projections are based on the combined trap and video index, using the Conn method, and so you wouldn't want to compare those directly like the report that has just the nominal CPUE, or even

the standardized CPUE, from the trap index, which the SC DNR does, because it doesn't include that video, and so some caution has to be used in using those values from the projection, and so I just wanted to state that.

DR. BUCKEL: Thanks, Matt. I appreciate that. That's a good point for us to consider when we do compare that, or when we look at that in the future, and we'll have to get the combined estimate. All right. I've got Marcel and then Fred Serchuk. Marcel.

DR. REICHERT: Thank you. You asked one of my questions, and I did have a quick question, and that's just for the record, and can you pull up Slide Number 2? Under the first bullet, you said it found that OFL was greater than the ABC, and should that be the ABC was greater than the OFL, or am I missing something?

DR. VINCENT: I think you're right. I think it was that the landings and the ABC were greater than the OFL, and so, yes, I think I switched those.

DR. REICHERT: Okay. I think, just for the record, I think that would be good to correct, and that's the only comment that I had at this point. Thank you. I appreciate it. The other one was, it would be -- Since the -- If we want to follow the index, since the index with the video always takes longer than the trap, and Wally may be able to comment on that, for black sea bass, doesn't the trap catches match the video catches, in terms of trends, quite well? In other words, the information that we get from the trap catches alone, because those are generally available earlier than the combined one -- Would that provide us at least with some indication in terms of what the population is doing? Does that make sense?

DR. VINCENT: I think -- I will jump in, and then I will let Wally go, and I think you could use it as a general like eyeballing it, and just kind of compare it to the projections, but you wouldn't be able to like actually look at the values and compare the values.

DR. REICHERT: Yes, and that's a good point, but perhaps, just in kind of general terms, in terms of what the population is doing. Thank you, and I appreciate that.

DR. BUCKEL: Marcel, I had the same thought, that, you know, we want to be able to compare this to the trap, because we get the trap data earlier than the video, and so either having the index -- If possible, to have these index predictions be for the trap only, which might be difficult, because I think the model is being fit to the trap and video combined, or we look at -- You know, it's probably species -- It is species-specific. If the trap/video index always overlays the trap, and it may be that that's the case for black sea bass, and then we feel comfortable with, you know, comparing the trap/video predictions to trap, but Wally is going to chime-in, and it looks like Kyle Shertzer as well, and, Fred Serchuk, we'll get to you after we finish this discussion. Go ahead, Wally, and then Kyle.

DR. BUBLEY: To Marcel's point, typically they do match up fairly well with most of the species that we utilize, and I'm guessing that Kyle has a little more information specific to black sea bass. I can't recall exactly between the two of them, but I would not be surprised if they're very similar, knowing that most of the species that we have in both gears are very similar to each other, in terms of the index of abundance.

DR. BUCKEL: Thanks, Wally. Go ahead, Kyle, if it's to that point.

DR. SHERTZER: I mean, not much to add, beyond what's already been said, but black sea bass is one of the rare species where we actually -- Or the SERFS traps more than they actually see on the video, and the two indices really go track very closely, and so I think Marcel's point is a good one, that, if it's used for management, it would be ready more quickly than the video index, and so this could be one species that it would be a good approach.

DR. BUCKEL: Great. That's important to know, and so we may want to take a look at what these predictions look like in the recent years, relative to what Wally's group has found. Chip, is it to that point?

DR. COLLIER: Yes, and I put a link in the chat, if you would like to look at what was presented by South Carolina DNR at the September council meeting, and it has both the trap index in there as well as the video index, and it doesn't have a combined one, but you can see, on Slide 17 of that presentation, that it shows black sea bass, with the trap up top, and then the video at the bottom, and you can see that they do track very well.

DR. BUCKEL: Thanks, Chip. All right. Fred Serchuk.

DR. SERCHUK: Thank you, Chair. Admittedly, I'm not very familiar with this fishery, but it seems to me, and correct me if I'm wrong, that what is driving everything are the discards, and I'm just wondering -- When I see discard levels that are many times higher than the actual landings, it seems to me that we have a problem in trying to control the landings, because the discards seem to be several times higher, and that sounds very odd to me, and I'm just wondering, and are there any other ways to control the discards, other than trying to minimize the landings? It seems to be really backwards for me, and I understand that I don't understand the dynamics of the fishery, but I'm taken aback that, no matter what you do, the discards still outnumber the landings by a considerable amount. Am I wrong? Thank you.

DR. BUCKEL: No, and you're absolutely right, Fred. I looked at the MRIP numbers this morning, and, you know, this has been a consistent pattern for this species, where you have millions of live discards, and hundreds of thousands of fish that are landed, that are harvested, and so that's been part of this fishery, you know, that a large -- It depends on the year, but, you know, in some years, it's half or more, and small black sea bass are caught in state waters, Fred, and so, you know, you have a lot of people fishing with small hooks, for a variety of different things, in inshore waters, and they catch juvenile black sea bass in large numbers, and so that's part of it, but then, of course, there is -- It, again, depends on the year, but, in the federal waters, they can, you know, be 50 percent of those live discards.

DR. SERCHUK: It seems to me that the tail is wagging the dog, than the other way around, and I'm just a little bit taken aback that this situation is the one that we have to constrain the landings, because the discards far outnumber the landings. Thank you.

DR. BUCKEL: Thanks, Fred. Others that want to comment to Fred's point, go ahead, or, if you have other questions for Matt, please go ahead. Okay. Seeing no hands, I do have one other thing that I would like to have some discussion on, and so, just to remind everyone, this is the first time where we are -- In the projections, where we're using this constant F discard, right, and basing it

on previous F discard and moving that forward in the projection, instead of reducing the dead discards proportionally as the landings drop in this rebuilding scenario, and so that -- You know, we talked -- Erik Williams gave us a presentation that, you know, this is going to be an iterative process, to see how this goes, and so you can see, in the scenario that's on here, right, that we get these really large numbers of -- As the numbers go up in the population, and this is using the long-term recruitment, you build up those numbers of fish, and then we have that constant F discard, and you end up with these really high values of dead discards, right, three million, and so that's not --

You know, that level of dead discards hasn't been seen in this fishery before, and so it may be something that we keep an eye on, and see how these compare to the reality, as we move forward in time, and we may revisit that approach to how we deal with the dead discards in these projections. There may be something that we've got -- As the population rebuilds, then that F discard from the past, when the population is at low numbers, may be too high, but does anybody have any other thoughts on that?

We can have a little discussion on that, for what we want to monitor, but that's the one thing that gives me pause, but that's not -- You know, the ABC, we felt, because it's using the recent recruitment, those numbers of discards match what's happening now in the fishery, and so that doesn't -- I think that's -- You know, what we're going to be moving forward as the ABC, and so I'm a little more comfortable there. Marcel.

DR. REICHERT: I agree with you, and, also, it points out, and also to Fred's point, that reduction in bycatch mortality is really important, and so -- But I'm not sure if we made a recommendation already to a potential next operational assessment, but that may help, I think, to see what's going on, because one of my concerns is similar to yours, in terms of the level of discards, and so perhaps it would be good for us to recommend a year in which we think the next operational assessment would be useful to check where we are, in addition to just monitoring other signs of what the population is doing, and I'm thinking maybe in three to five years, and three may be a little soon, but I think it would be good.

DR. BUCKEL: Thanks, Marcel. I agree on that, and this is a reminder to everyone that the index -- The model fit to the index is very good, and so this is something that an interim analysis could be done, as a check, before the next operational assessment, and so if anyone has some thoughts on the timing there, and so Marcel just provided a, you know, three to five years for the next OA, but we're already -- The terminal year on this assessment was 2021, if I'm correct, and correct me if I'm wrong on that, and then so we're already three years past, and so we may want an interim analysis, you know, relatively soon, to see how things are moving along.

DR. REICHERT: Jeff, if I may, I think that's a good idea, the interim analysis, and I think we've raised that, when we were discussing the interim analysis on vermilion snapper, to potentially see how that would work with black sea bass, and so I agree with that. Thank you.

DR. BUCKEL: Thanks, Marcel. Do others have thoughts on the presentation or timing of the next OA or interim analysis? Fred Scharf.

DR. SCHARF: Jeff, I just -- I just wanted to, you know, maybe ask a question or comment on the discard mortality, and, you know, as you said, I think black sea bass may be unique, in that, you

know, it's probably the most common sort of serranid that gets caught recreationally in shallower waters, you know, when folks are targeting other things, and I just wonder -- I know that the assessments are using the, you know, most recent estimates of release, post-release, mortality, a lot of that based on work that you've done with Paul and others in this region, and I wonder just how resolved is the discard mortality estimates, the Fs, the F discards, related to, you know, depths where folks are catching these fish.

In other words, as part of the APAIS, the intercept surveys, you know, if people are catching sea bass in twenty or thirty feet of water, versus sixty or seventy, that can make a big difference in their discard -- You know, in the fate of those fish, post-release, and I wonder if the capability is there to resolve it at that level, or if it's being applied a little bit more broadly, and do you have a sense for that? I'm not asking necessarily that you may know the exact answer, and I'm just kind of throwing that out there, and this may be a kind of unique case, for black sea bass.

DR. BUCKEL: It's a great question, and, at one point, the way it was done, and so Matt or others can chime-in if it's not done that way, but the state live releases were broken out separately from the federal live releases, and a different post-release mortality was applied to the state water live releases, a lower one, for the point you just made, with the lack of the barotrauma, but, you know, I know that was done at one point, and I think it still is, but folks can correct me if I'm wrong.

DR. VINCENT: No, and we just applied a single rate across all of the landings, or all of the discards, because there wasn't really good information on the depth that they were fishing, and we did look into it during the assessment webinars, but we ultimately decided to just use a single value, but we used quite a wide range, and so that range is quite a bit more, and I think that's what results in the wide variability in the fishing mortality, and quite a bit is due to that wide range in what your discard mortality is, applied to those live discards, and so we did try to incorporate some uncertainty in that, but we ended up just using a single value across all of them, because there wasn't enough information.

DR. BUCKEL: Thanks, Matt. Chris.

DR. DUMAS: Hi, folks. Thanks. As an economist, I have a question for the biologists, and so, based on our knowledge of the biology of the black sea bass behavior, and habitat use, is there any practical advice that we could give to recreational anglers who are fishing in shallow water, around barrier island, behind the barrier islands, in the intercoastal waterway and that type of thing, about how to avoid black sea bass, about when and where to avoid -- How to fish to avoid them, in terms of time and location, and maybe what type of bait to use, or what type of bait to avoid, in order to, you know, reduce unintended catches of black sea bass. Thanks.

DR. BUCKEL: I wish there was something that could be done on that, Chris, but I -- They're generalist feeders, and so you just can catch them on such a variety of things, in a variety of habitats, and so it's difficult. You know, folks that are targeting other species are going to encounter these, in a variety of different habitats, using a variety of different baits and lures, et cetera, and so it looks like Jim and Anne are going to chime-in on that as well, but that's my take, Chris. Go ahead, Jim.

DR. VINCENT: Jeff, actually, can I correct what I had said previously? I was wrong in what I said, and so we did apply a single rate, but that single rate, as you said, was calculated based on

ratios, but it was done previously, and so we used the same value that was previously done in SEDAR 56, and that was calculated based on the ratio of those landings, and we didn't have any new information, and, thus, we didn't update it, and so sorry about incorrectly stating that previously.

DR. BUCKEL: Matt, when you say ratio, that's the state to federal live discards?

DR. VINCENT: I think it used some data from Florida to calculate the different -- The ratio of the different depths, and then we had estimates of discard mortality at those different depths, and then multiply them all together to get an overall rate, a weighted rate, and we kept that weighted rate as the same median, and then we just expanded the confidence intervals in the MCBE.

DR. BUCKEL: All right. Excellent. Thanks for the clarification, Matt. I appreciate that. All right. Jim.

MR. GARTLAND: Hi, and so, again, I'm still kind of learning South Atlantic fisheries, and reading a bunch on it, but is there any expectation -- I think, if I'm understanding correctly, that the rate of -- We're assuming the rate of discards will stay the same, which is why the amount of discards are increasing, and maybe you kind of were alluding to it in your comment earlier, but is there any thought that the behavior of the fishermen will change such that -- Not that they're trying to actively avoid sea bass, but, if the quotas of what they can keep is getting lower, is it possible to be going to other areas where, sure, there will still be sea bass, but maybe the probability of encounter is lower, and so maybe what we're seeing here, with these discards, could be an upper-end estimate, and does that make sense? I guess do we expect behavioral changes at all?

DR. BUCKEL: Jim, I think the issue, in the South Atlantic, is black sea bass are found -- In the federal-water part of the fishery, they're found in the same habitats as gray triggerfish and vermilion snapper, for example, which are -- You know, folks will be targeting those, instead of black sea bass, you know, if the regulations go in to limit the black sea bass catch, but those hooks will still be in the water, you know, smaller hooks with bait, and the black sea bass will still be caught, and so that's the issue with this multispecies fishery, but, you know, it is that constant F discard, and that's an average from the recent time period, when the population is low, and so, as the population increases, and say you keep the fixed number of hooks in the water, and then that F discard might reduce when the population of black sea bass -- The numbers increase in the population, and so that's -- There may be some behavioral shifts, but I think, because of the multispecies nature of the fishery, it's less likely, and that's why we went with keeping that F discard constant as we moved forward in the projections.

MR. GARTLAND: That makes perfect sense. Thank you very much.

DR. BUCKEL: Anne.

MS. MARKWITH: Thanks, Jeff. I just wanted to weigh-in, and, kind of to your point about where people are interacting with these species, but this also gets to Chris and Jim's questions, and I can only speak for North Carolina on this, but I know a lot of the management that North Carolina has put into place recently for state-managed species is probably going to affect the encounter rate for some of these federal species, particularly sea bass in internal waters, and the reason I say that is flounder is a prime example for North Carolina, where we've put very restrictive regulations in

place, and so people are going more for fish like sheepshead, which occupy the same habitats as sea bass.

To Chris's question about can we put information out there, we can put that information out there, but, because of shifts at the state level, I'm not sure they're really going to be able to avoid sea bass, because now they're going for what they can catch, and, in this case, it's things like sheepshead, and so -- That's going to affect, to Jim's point, the fishermen behavior change, because of how they're interacting with species that occupy similar habitats.

DR. BUCKEL: Thank you, Anne. All right. Other questions of Matt? I think it would be helpful, while we've got the group here -- Marcel mentioned, you know, the recommendation for the next operational assessment, and I think the council will appreciate having a recommendation on that, but also this interim analysis, and I would like to get some thoughts on when that would occur, and so, just to remind folks, the management will go into place in 2025 for this, and so we wouldn't want to necessarily do it that year, but that would -- 2025 would be four years after the terminal year, and so maybe 2026, where there is at least one year where the management has been put into place. I mean, part of this, right, is it's not just the management effect, but just seeing if recruitment has stayed at the low levels, right, where the interim analysis might help give us an indication of if using this recent average recruitment is appropriate and to stick with -- You know, that's really affecting these ABCs, and so --

DR. CURTIS: Marcel has his hand raised.

DR. BUCKEL: Go ahead, Marcel.

DR. REICHERT: Thanks. Maybe some of the council staff can comment, but, given the -- Although that's a matter of, you know, priority, but, given the current SEDAR schedule, would that be at all a feasible option, or is that perhaps something we should not even consider, because 2026 is coming up really quickly, and I think, by and large, that schedule has been determined, and I know that SEDAR schedules always change, but I don't have -- I tried to look up that schedule, and I wasn't able to find it quickly. If there is a full schedule, you know, I think it would help the council if we can at least say that we do or do not find that a high priority, and so, if there is a change in the schedule necessary, at least they can take that into account. Thank you.

DR. BUCKEL: Thanks, Marcel. Council staff, any comments on that?

DR. COLLIER: There's a few hands raised. Judd, is your screen frozen?

DR. CURTIS: It's still on the OFL scenario projections.

DR. BUCKEL: Okay. Shannon.

DR. CALAY: Thank you. The center has been undergoing some planning discussions with the council staff, both the South Atlantic and Gulf Council staff, you know, about ways that we could improve the flexibility of the assessment process and tighten up the production of management advice, so it's not four years, you know, behind the terminal year of the stock assessment, and, at this time, those discussions are still in progress, and we do intend to put together a progress report to present at the SEDAR Steering Committee meeting in March, but my recommendation would

be, you know, at this point, if the SSC would like to request information, that you go ahead and, you know, express your opinions, and we will consider those when we try to put together what stock assessment alternatives we'll be considering for the near future, because, you know, the Science Center recognizes that, you know, we need to find additional flexibilities in the SEDAR process to allow us to provide timely management advice, and so we are very much working on those approaches.

DR. BUCKEL: Thanks, Shannon. We will make some requests here, and it looks like Judd is capturing that, and so I'm glad to hear that the center is moving forward with reducing the time between assessment and management. Julie.

DR. NEER: Shannon said some of what I was going to say, but, in regard to Marcel's question, we are supposed to be finalizing the 2026 assessment schedule at the March steering committee for SEDAR, but, along those same lines, if you think this is critical, please express so, and, if anyone is looking to find what's on the schedule for 2024, 2025, and 2026, tentatively, if you go to the SEDAR website, along the right-hand side, there is a grid. If you click on it, it will expand, and you can see what is scheduled, what is planning, and what is suggested for the future, just as a way to find those items, and so it's really up to the SSC, and please make your recommendations, and then the council can bring those recommendations to the steering committee and inform their discussions when we work on the schedule for 2026 and then moving forward. Thanks.

DR. BUCKEL: Thank you, Julie. Chip.

DR. COLLIER: Thanks. Just to let you all know, the council has been discussing which species to add into the assessment slots for 2027, and black sea bass wasn't on that list, and they were currently considering a gray triggerfish OA, as well as a scamp operational, or -- Sorry. It's a red porgy operational assessment and a red snapper operational assessment, is what was currently proposed for 2027. The red snapper is going to be following up the research track. There will be some discussions about this later on in the conversation, or later on in this meeting, but red grouper was the only other operational assessment we had.

That species too is overfished, and it hasn't had great rebounding, and all the other slots are currently filled up, unfortunately, and so you guys can provide recommendations, or maybe talk about this, whether or not to consider red snapper or red porgy, which one, and what we will do is, in the fall, or, at the April SSC meeting, what I will do is make sure that we have statements of work for red porgy, as well as black sea bass, based on your conversations, in order to get everything -- That way, if the council changes their mind on the 2027 species, we can have the statements of work already developed for both of those species, and it will have your comments in there.

DR. BUCKEL: Thanks, Chip, and so what are folks' thoughts? Marcel had three to five years, and so that's 2027 to 2029. If you pick the middle, it's 2028, and if anyone has -- You know, we could keep it broad like that, and, if something drops out of 2027, and we can get black sea bass in, we could push for that, or we can say the interim analysis, right, and it's not -- I think it's not just a health check on how the projections are doing, the status of the fishery, but we had the ability to change the ABC based on that, and that's my recollection, and so, given how well the index tracks the population for black sea bass, that may be -- If we did that in 2025, or 2026, then maybe

we don't need an assessment, or an OA, right away in 2027. Fred Serchuk, and then Marcel, to that. Go ahead, Fred.

DR. SERCHUK: Thank you, Chair. You know, I don't think, when the Magnuson Act was passed, that it ever perceived that there would be a situation here where a directed fishery would have to be reduced because the level of discards in non-directed fisheries, as bycatch, was many times larger, and, therefore, the approach that Magnuson takes demands that the directed fishery be reduced, while the amount of discards from other fisheries that are discarding essentially remains unchanged, and, in some cases, it increases.

I realize that perhaps we have no other way to move forward than to do this, but, if I were a directed sea bass fisherman, I would be aghast and basically saying, look, you're going to have to take our landings down to very low levels, while there's a magnitude of difference between what we're landing and what is being discarded in other fisheries, and, again, I think some type of statement has to be made here, because, again, the analogy that I used before seems to be even more correct, that the tail is wagging the dog here, and we're not really doing anything to curtail and move, so that the dog really wags the tail.

Again, I know people are doing their best here, but, when I look at these numbers on the tables, I am just struck by how low the directed fishery is related to what the magnitude of the discards are, and they really don't change very much in any of the projections, in terms of the discards, and so I don't want to waylay anybody, but I'm just -- As an outsider, I'm just perplexed by the situation. Thank you.

DR. BUCKEL: Fred, thanks, and, you know, that's the -- The SSC has given the council -- You know, we've talked about this and made recommendations to the council about the need for a reduction in effort, right, and that's when the hooks are in the water that, you know, we're going to have these -- With a large number of hooks in the water, then we're going to have the high numbers of discards. Marcel.

DR. REICHERT: A couple of things. Since the -- I think this is very -- I want to go back to the operational assessment and the interim analysis. I think those are really important, and so I would like to strengthen that language and say strongly recommend, or something like that, because I think, you know -- Again, also, what Fred and others have said, and I think it's really important for us to know what's happening with the population, and so that's why I think -- I think that's important, to strengthen the language a little bit. Thanks.

To Fred's point, it's very reminiscent of what's happening in red snapper, the whole bycatch issue, and so that is an important issue, and I think we have, as an SSC, mentioned that several times, that -- You know, how the bycatch, and the bycatch mortality, affects the rebuilding of a population, and not just in black sea bass and red snapper. Thank you.

DR. BUCKEL: Thanks, Marcel. Chip.

DR. COLLIER: I did want to point out that interim analysis, although it does take up a considerable amount of time for the Science Center, those don't go on the SEDAR grid, and so it's just the operational assessments that would be on that SEDAR grid.

DR. BUCKEL: Thanks, Chip. All right, SSC members, and you can see the text that Judd has been typing up for us. Thank you, Judd, for capturing our discussion. Are there other points that we've covered that aren't on there? Please let Judd know now. Amy, go ahead.

DR. SCHUELLER: I was just going to suggest that, on the bullet that says "magnitude of discards related to landings is a huge problem", that we add a sentence in there about effort reduction, just to be a bit more pointed. I know we've done it time and time again, but I think that we have to just keep saying it.

DR. BUCKEL: Thanks, Amy. Anything else to this bullet for reviewing the projections and characterizing uncertainties? Genny.

DR. NESSLAGE: I am just wondering, and do we have any recommendations for how they can better monitor discards, and like I feel like this is -- It's a nice thing to recommend, but how do we -- How do they do this, and maybe I missed the discussion on that, but do you see what I'm saying?

DR. BUCKEL: Are you asking about the recommendations for effort reduction or how they're getting the -- How they're tracking discards?

DR. NESSLAGE: Yes, that one, the one that Judd has got highlighted there.

DR. BUCKEL: Yes, I think it's -- This is -- When you look at the live releases in the MRIP data, last year, it was six-million live releases, and 300,000 harvested, or something like that, and so that's -- The bulk of the live discards is in that recreational fleet, as I recall, and so that's where the -- It would be comparing, or keeping an eye on, those MRIP numbers, relative to what's in the projections.

DR. NESSLAGE: I guess I was -- Where I was going with that is how reliable are those estimates, and I think it's all we have, and so we need to do exactly what you're saying, but I guess where I'm going is how reliable are those discard estimates, and is there anything else that can be done? Are there state surveys, or is there anything else that can inform that discard monitoring?

DR. BUCKEL: Thanks, Genny. Folks can chime-in, and, Steve, it might be to the point, but it's okay if you've got something else, Steve.

DR. TURNER: Okay. I have two points. To that point, I wonder whether recommending at-sea observers might help better understand discard mortality, and I assume that Florida is doing that, but I don't know if that's done in other areas by MRIP. My other point is, on the bullet of "strongly recommended", I would -- I would prefer to recommend the interim analysis in 2026, and I would put that before the operational assessment, because, as a manager, I would really want to know how I'm doing with respect to the index.

DR. BUCKEL: Thank you, Steve. Good edit. Other responses to either Genny's question or that bullet overall? Fred Scharf.

DR. SCHARF: Thanks, Jeff, and this isn't -- Judd, don't type any of this, and this isn't for the notes, and so I'm just sort of -- Just, you know, throwing out sort of an idea, based on, you know, Genny's comment about the reliability of the MRIP discards, and, you know, I think it's almost

optimistic, and I think the reliability of MRIP broadly is uncertain, right, and I think one of the things that we've been seeing, with MRIP, is that, you know, as we evaluate it more and more, and start to try to use it more broadly, you know, they're identifying more uncertainties, right, and just the most recent change that we just had, with their mail effort survey and the ordering of the questions potentially creating a bias, right, and the direction of that bias is still potentially uncertain, but so, unlike other kinds of sampling programs, where, when you put more effort in, you tend to increase precision, it seems like MRIP works backwards.

The more things they had, the more uncertain it becomes, and I'm just wondering -- You know, in the South Atlantic, where we are, we have this great survey, you know, and we've had this long-running survey, the trap survey, that we've added the video index to, and so we -- I think all of us feel really strongly about the reliability of that survey, and that it accurately is tracking changes in these populations, and then, in particular, some of the biological and demographic information that the center is able to collect, in terms of age and size structure.

I'm just wondering how we can move our sort of assessments, moving forward, where they're much more reliant on that information and much less reliant on these, you know, sort of challenges with the MRIP data, and being able to use that -- You know, use the information that we feel really good about to sort of trigger interim analyses, or potential new assessments, and so, again, just more soapbox comments, but I'm just, you know, thinking about what Fred is saying, you know, about how these discard issues are overwhelming everything, and black sea bass is just a poster-child for that, and we're seeing that in the other stocks as well, and so we're seeing recruitment failure across-the-board, and a discard that far exceeds landings across-the-board, and so just thinking about how we're going to move forward, you know, in a reasonable way, and so, again, not for the notes or anything, but just my thoughts.

DR. BUCKEL: Thanks, Fred. Wally.

DR. BUBLEY: To Genny's question, I don't -- I can only speak to South Carolina, and I know we don't have any means of getting data outside of the MRIP-type surveys. This seems like something that is really ripe for the citizen science programs, and, I mean, the issue with all of these discards are the amount of people that are out on the water, and I don't think you can put observers on all of those boats, and there's a lot of vessels going out from all over the place, and this seems like something that citizen science would be more prone to be able to tackle.

DR. BUCKEL: Thanks, Wally. Shannon.

DR. CALAY: Thanks, and so, again, you know, the Science Center is also, you know, obviously quite concerned about the potential for bias, and for uncertainty, in the MRIP estimates, and we are certainly working very closely with OST as they study these issues. We are working on some various approaches, and, you know, frankly, we haven't come to a point yet where we're ready to make conclusive recommendations, but, you know, we are able to do some research that can determine whether we can provide management advice, using a variety of different approaches, that is robust to uncertainty, and even bias and removals, and that is the kind of research that is being conducted now.

A lot of this research is being conducted in a simulation framework, and so, essentially, MSE, and we hope that, you know, in the next year, or two, that we will have some conclusions where we

can say here are approaches that we have tested, and evaluated in a simulation framework, that achieve the management objectives of preventing overfishing and allowing overfished stocks to rebuild, but also are robust to the potential for bias in the removals. That work is underway, and hopefully, you know, we won't need to worry as much about the exact magnitude of recreational estimates in the future, but that is all still -- It remains to be seen.

DR. BUCKEL: That sounds very exciting, Shannon. Thanks for telling us about that research. We'll look forward to getting a presentation on that, hopefully in the next year or two. Thank you. Jennifer.

DR. SWEENEY-TOOKES: Thanks. I put my hand up, and my hand down, and I put my hand up and thought about it, and put my hand down, but you caught me in one of those, and I wanted to speak to the idea that we could use citizen science for this. You know, several of us are working on a project for the council, that's been going on as a contract since last summer, looking into citizen science and the potential for using it with all three sectors, and so I just wanted to mention that there might be a whole different can of worms that we open in trying to do this.

You know, we're still neck-deep in data collection, but we're really running into a vast set of differences in people's understandings of what they're doing, or what they're seeing, especially among recreational anglers, and so, while we certainly hear from people all the time, in every interview, that, you know, the data we have is bad, I don't know that that might be the salvation that we would very much like for it to be. Again, this doesn't need to go into the notes, but I just wanted to respond to that idea.

DR. BUCKEL: Thanks, Jennifer. Marcel.

DR. REICHERT: I have a suggestion under the second bullet point, as a sub-bullet, to kind of justify our choice for an interim analysis, and perhaps add that, although the index uses a combined index, the trap and the video index, they track well, because people may wonder why we are asking for an interim analysis and then also for an operational assessment, and I think, given that they track well, I think that would be a good justification for an interim analysis, if other people agree with me. Thank you.

DR. BUCKEL: I definitely agree with you, Marcel, and so good edit, just to let folks know that the SSC has faith in the application of the interim analysis here, given how well the index tracks abundance, or how well the -- Yes, how well the model fits to that index, I should say. All right. We've built a good response to this bullet. If there are no other hands for this, you'll get another chance to edit this text before we send the final report to the council, and so I think we can move on to the next bullet.

I haven't heard any heartburn about -- There's been some heartburn and discussion, but, given the workgroup's recommendation, and the SSC's approval of that in the past, and so it sounds like everybody is onboard with setting the catch levels based on the projections that Matt provided with the updated F landings scenario for ABC, but please comment if that is not true, if individuals want to have a discussion on that.

DR. VINCENT: Jeff, can I -- I just wanted to make a comment about, if you're planning on doing an interim analysis, you should probably do it based on the combined video and trap, because you

might be doing like an apple-and-orange comparison if you try to just use the trap, even though we had said you can do it as an eyeball comparison, but I think, if you're going to try to end up changing the management, I think you should probably do it based on what's actually in the assessment, and so that would put in probably a year delay in what your terminal year for that interim analysis.

DR. BUCKEL: Thanks, Matt, and so, if the interim analysis is done in 2026, it would only have data for the combined through 2025.

DR. VINCENT: Yes.

DR. BUCKEL: Okay. I think this is -- Maybe we eyeball for -- The 2026 trap data might be available, and given that that trap/video index, the combined values often lay right over the top of the trap, that may be -- I think we can stick with 2026 for that, but I hear you on setting ABC and using the Conn.

DR. COLLIER: Jeff, there's a -- I guess there's a delay in what's showing on the screen right now. Marcel, Wally, and Mike Schmidtke have their hands raised.

DR. BUCKEL: Okay. Thanks, Chip. All right. Marcel.

DR. REICHERT: I do agree that, ideally, you would like to use the combined, but that kind of defeats the purpose of getting timely information, and so I still feel that an interim analysis using the trap data, because you can add a year, would help us, as an SSC, see where we are, and I realize that that probably -- Or that may not be sufficient for solid management advice, but at least it gives us an idea of the general direction, and so I just wanted to make that remark. The other thing was, and that's relative to the next bullet point, but it would be good, I think, to add to the notes what scenario exactly we are basing our ABC recommendations on, although that may seem a little redundant, but I think it's important to add that there. Thanks.

DR. BUCKEL: Thank you, Marcel. Judd, did you catch that?

DR. CURTIS: Sorry, Marcel, but can you say that again? I was still wordsmithing.

DR. REICHERT: Under the ABC recommendations, in the next bullet point below -- Yes, that's basically the point I was making, to make sure that we put, in our report, exactly what scenario we are basing our ABC recommendations for, and that will be helpful for the future, so we don't have to start, you know, looking for that. Thanks. As a matter of record. Thanks.

DR. CURTIS: Okay. Is that substantial enough for you there, for the record?

DR. REICHERT: I would even be more specific, saying exactly what the scenario is, because then people don't have to go back to the Attachment O3a when they read through this report, and does that make sense?

DR. BUCKEL: Yes, it does.

DR. CURTIS: Let me -- I will copy the specifications and the parameters from the model.

DR. REICHERT: Yes, and that works fine, and it's just I like to avoid people having to go through attachments and attachments, in order to see what we exactly did. Thanks. I appreciate that.

DR. BUCKEL: Thanks, Marcel. Wally.

DR. BUBLEY: I just wanted to point out, with the timing of the traps and the videos, if you're doing an interim analysis in 2026, you're probably only getting 2024 data, which wouldn't have even incorporated any of the management actions, I would be willing to bet, because it takes -- It takes a fairly substantial amount of time to get those videos read, prior to even being able to go through the standardized process and then combining with the Conn method, and so I would be very surprised if, in 2026, you could get any data prior to 2024, at the latest.

DR. BUCKEL: Thanks, Wally. I was overly optimistic, but the trap data from -- So, in 2026, the trap data for 2025 would be available?

DR. BUBLEY: Typically, that's -- Our turnaround time is normally just before our season starts, and we can usually get the previous season's index run, and so it's typically in the winter, and the early spring, when we complete the previous season, and so, yes, usually around April or so is a good time window.

DR. BUCKEL: Okay. Thanks, Wally. That's helpful to know, and so we can add some discussion on this for the timing of the interim analysis, and, you know, you're absolutely right that the management doesn't kick-in until 2025, and sometimes you want to see -- Part of the reason you're doing this is to see if the management is being effective, but, in this situation, we are also are interested in the recruitment, and so my take is, you know, getting it -- We don't have any -- You know, the recruitment, for the last couple of years of the assessment, are -- You know, in 2021, I think there is no -- There's not enough information to get an estimate of recruitment, and so we really don't have -- It's 2019, I think, is the last year where there is information to inform an assessment, and so, if we had information from 2020 to 2025, just on recruitment, that would -- I think that would be helpful, in my mind, even though the management -- We won't have a way to -- You know, we won't be able to see the effect of management at that point, but others please chime-in, because that would affect the timing of that IA. Mike Schmidtke, we'll go to you as folks are pondering the IA timing. Sorry, Mike.

DR. SCHMIDTKE: No problem, Jeff, and, actually, my, I guess, comment, or question, is not related to interim analysis planning, and so, if you would rather finish that discussion, and then come back to me, but it's going to be on a different topic.

DR. BUCKEL: Okay. Will do. Jim.

MR. GARTLAND: Thank you very much. Just thinking about the combined trap/video index and the lag in the availability of the video data, would it be possible to maybe try some method, for example, like Thorson's VAST, or something like that, that can still generate an index where there are certain years of data missing from a particular survey, and so, for example, what we could do is take the index that we have now, the combined index, run a scenario where maybe we take a couple of years of video data out, to see how well the index performs, how different it is from the one that has the combined data in it, and then, if we're satisfied with the way in which it's

performing, we might be able to use that model to kind of get a first look, or an early look, at what the trap/video index would look like, even though the video data aren't available, let's say, for the most recent year, and like that might be a cool analytical approach that we could use to maybe allow us to get at least a first cut of the index faster.

DR. BUCKEL: I will let the analysts respond, Matt or others on the call, and it sounds like a good approach to me, but I will let others, with more quantitative skills, chime-in.

DR. VINCENT: I would say that the index that we did use is actually missing 2021, because there wasn't a fishery-independent index in that year, and I'm not entirely sure about switching out the different indices, and I'm not an expert on the interim analysis, and so I'm not sure how that would work, if that's a viable option to switch out the index that's used in the assessment for a similar index, and I think we would have to do some additional evaluation of that.

DR. BUCKEL: Thanks, Matt. Kyle Shertzer.

DR. SHERTZER: I would just comment that I think that sounds like a reasonable approach, to use methods that can handle missing years of data. The Conn method, that was used, actually does handle that pretty regularly, because, at least in the earlier years, we have trap data, but no video data, and so this would just be an extension of that, where there's no video data at the end of the time series.

DR. BUCKEL: Thanks, Kyle. That's helpful. Marcel.

DR. REICHERT: A quick question, and so, for the missing 2021, we used the average of the two years on either side, right, or did we just have no data?

DR. VINCENT: We just used no data in 2021 in the assessment.

DR. REICHERT: Okay. Thanks.

DR. BUCKEL: Thanks, Marcel. So it sounds like folks are willing to stick with the IA of 2026, even though we would likely only have the video data through 2024, but we have some ways of getting at that value for 2025, the combined value. All right. Seeing no other hands, we'll switch gears and go to Mike Schmidtke.

DR. SCHMIDTKE: Thanks, Jeff. Just kind of listening to the discussion you all are had, and I was wondering if I can make a request of the SSC. When you all get to the point of setting your catch levels, if it is amenable to the SSC, would you consider setting them as an overall removal level in each year, and so, you know, your annual removals, in terms of removals, landings plus dead discards, and the reason why I'm requesting this is because, right now, the council is working on several different initiatives geared towards reducing dead discards, and the hope is that they would be able to be successful in those efforts.

There is a bunch of studies going on, and the council is doing this both in the context of now black sea bass, but also they are doing this, trying to do this, for red snapper, and several other species throughout the complex, and so the intent here is that, if the SSC would set ABC and OFL levels as total removals, and you recommend, you know, an initial breakdown of landings of discards,

but if you would also include a statement noting that, if the council, through management actions, is able to project a reduction in dead discards, that landings could be increased such that the removals in ABC, the ABC removals, are not exceeded.

DR. BUCKEL: Thanks for that question, Mike. What are SSC members' thoughts on that? Marcel.

DR. REICHERT: I have no problem with that. A dead fish is a dead fish, whether it's landed or whether it dies because of discards, and the uncertainty on dead discards, obviously, is a lot higher, and, also, to that point, in the tables, and I think we commented on that before, the discards in the tables are dead discards, and so, you know, that may be -- It says discards, but it's really the dead discards, correct?

DR. BUCKEL: Marcel, thanks for -- I meant to ask Matt to correct that.

DR. REICHERT: Again, for the record, I think it's important to make sure that we all know what we're talking about, but, in terms of total removals, I think we discussed before that, you know, the -- Anyway, a dead fish is a dead fish, and so I have no problems with that. Thank you.

DR. BUCKEL: Thanks, Marcel. Matt, just it's on the screen there, where D equals discards, expressed in numbers, and that would be -- We're pretty sure that's D equals dead discards, expressed in numbers.

DR. VINCENT: Yes, I'm pretty sure. I will go back and double-check, but, at this point, yes, I'm pretty sure it's dead discards, or, actually, I'm certain it's dead discards.

DR. BUCKEL: Great. Chris.

DR. DUMAS: I agree with Marcel that a dead fish is a dead fish, but a question I have, as a non-biologist, is is a dead small fish different from a dead larger fish? If the recreational fishery, or if the non-directed fishery, is catching and discarding different sized fish than the directed fishery, then that might make a difference, and I don't know, and I'm just throwing that out there as a sad economist in a sea of biologists. Thanks. I mean a happy economist in a sea of biologists. Thanks.

DR. BUCKEL: Thanks, Chris. Good point. Amy.

DR. SCHUELLER: I don't know what to think. I think that -- I get Marcel's point that a dead fish is a dead fish, but I think Chris has an important distinction, is that all dead fish aren't created equally. You know, there is problems, if we're just like discarding everything before it ever actually reproduces, and I guess I feel like -- A little bit, my thought was, okay, I get the request, Mike, but like what do you mean specifically?

So I know that there was an RFP out where there was proposals requested for, you know, looking at reducing discards. What I'm concerned about is that we've already sort of gone down those roads, and discussions, multiple times, and we just keep talking about reducing discards through methods that don't actually have a noticeable, or a measurable, impact, from what I can see at this point, and so I'm skeptical that anything that's been proposed, or is in the very beginning stages,

without good evidence, you know, really will, you know, give us reduced discards, and so I'm a little bit uncertain about the implications of the actual request.

DR. BUCKEL: Thanks, Amy. We'll go to Mike to respond to that, and then Marcel.

DR. SCHMIDTKE: Thanks, Amy, and I definitely understand your concern, and so just kind of cluing-in the SSC of what happened at the December council meeting, at the December council meeting, the council decided to pull back its approval of Regulatory Amendment 35, to rescind that approval, because they wanted to explore some additional options to try potentially to make a stronger impact on discards than what was included ultimately in that amendment, which that amendment included changes to the ABC, the annual catch limits, and then the implementation of the single-hook regulation for the recreational fishery.

With them pulling that back, they kind of opened up the discussion again, and they actually did request, you know, for staff -- For the materials we're putting together, much of the information that has been talked about previously, and so they are revisiting some of the discussions that have come around over the past few years, and I understand, you know, kind of the caution, and the wondering of what they ultimately will get to, and that's something I can't really speak on, because that's up to the council, and that's their decision on what they decide is actually going to be in an amendment, but the discussions about changes to effort, effort reductions, that door was at least opened.

There were a couple other discussions that got thrown out, like an aggregate limit for snapper grouper species, and so these conversations have come back around, and they are being discussed actively, and like they will be talked about at the March meeting, and, in the context of black sea bass, what the request is intended for is that, if the council is able to go through and put in some of these management options, that they will be able to realize some of that transition of dead discards into landings within the ABC removals, within that level, but they will be able to realize that without having to come back to the SSC and get a revised ABC recommendation, and so I hope I answered the question, but I will pass it back.

DR. BUCKEL: Thanks, Mike. Go ahead, Marcel.

DR. REICHERT: I mean, I realize -- I agree with Chris and Amy's comments, and so, you know, the dead fish is a dead fish is probably a way too simplified comment, and so I do agree, and so I'm -- Yes, I'm not -- Now I'm quoting Amy, and I'm not sure what to think at this point, in terms of our -- Of how to formulate our recommendations. You know, they have -- Depending on the size and age of a fish, it has different implications for the population overall, and so, anyway, I just wanted to mention that.

DR. BUCKEL: Marcel, are you done?

DR. REICHERT: Yes, and I was just thinking, and I'm not sure how helpful that is, but, anyway, thanks.

DR. BUCKEL: We'll go to Chris and then Genny.

DR. DUMAS: I just wanted to say that I agree with thrust behind Mike Schmidtke's comment about trying to get recommendations in terms of total removals, and that would give more flexibility to the council, in terms of considering different management possibilities and actions, and it maybe would allow them not to need to come back to the SSC as often, and I think that's a great goal.

I was just thinking about the discarding a small fish is different from discarding larger fish, and, with respect to the recreational discards that are, you know, inshore, I mean, we could think of small fish discards as two categories, the teensy-tiny small fish and then just the small fish, and I think, if I recreationally discard, and kill, a teensy-tiny small fish, that fish wasn't going to live anyway, and so it doesn't have any big impact on the population, but, if I discard just like a medium-small fish, then that fish might have lived, and it has a larger contribution to the population, and so maybe, you know, we could recommend like a table, or a schedule, that would give recommended total removals by size of fish, or something like that.

I know that's another level of detail, but maybe, or a table of total removals, a number that is total removals, but then have a table that gives sort of size equivalents of the different sizes of fish, so that, if you remove a fish of this size, it's equivalent to removing, you know, three fish of this other size, you know, of the -- So maybe it would be one number of total removals and then a table that could be used to convert removals of different-sized fish into, you know, a one-removal equivalent, and so kind of need like the dominant eigenvalue of each sized fish in the population projection model that we could give to the council, but saying that in a different way, and so something like that, and so, yes, that's my comment. Thanks.

DR. BUCKEL: All right. Thanks, Chris. Genny.

DR. NESSLAGE: Thanks, Jeff. Yes, I agree with everything that Chris and Amy have been saying so far, and I am just very concerned about the status of the stock, and, while I am sympathetic about, you know, the discard and total removals issue that managers are facing, I feel like there's just -- This may not be the time to do this, especially for this stock. The chances that they're going to bounce back as quickly as these projections indicate is, I fear, low, and so encouraging transferring some of this to landings is just -- I'm worried about what that might do to the stock, but perhaps I am misguided here, and I would be happy to be educated on how I shouldn't be so worried.

DR. BUCKEL: Thanks, Genny. Amy.

DR. SCHUELLER: I completely agree with Genny and Chris, et cetera, on everything that's just been said, and I -- I mean, my concern here is that, based on Mike's reply to my question, is that they have initiated discussions, and that doesn't mean we're like at the point at which action is going to be taken, such that we would have some sort of understanding of what the overall outcomes would be, and so, in my experience, and I've worked on an assessment where there's two different fisheries, and they're like, well, what if we change allocations, and those two different fisheries have different implications for sizes and ages that are harvested, and then you can tell them sort of what the overall implications are on the population.

In this circumstance, we have no idea what is going to happen, and we have no idea which options they would choose, nor do we have data on what the overall outcomes would be, such that we

could inform how the population would respond, and so, to me, you know, there's just no information to go down that road, and it just doesn't make sense. I understand that, you know, there is a desire to catch instead of discard, but, until we can come to a point at which time we're actually seeing some measurable change in any discards in any of the species in this complex, I don't think this is a very reasonable request.

DR. BUCKEL: I agree with folks that the timing seems a little too early on this, but I do want to give the council incentive to put the effort controls in, or whatever methodology that they're going to use to reduce discards, and so, Mike, maybe you can go back with, you know, we're going to do an interim analysis on black sea bass in 2026 that could -- You know, we'll get a health check then, and maybe revise the ABC, and, at that point, we can see how the council has done with reducing discards, and, if they have, then that could be -- Then we can revisit this, but this seems too early, for the reasons already described. Any other thoughts on that item or the response to the bullet? I still see Chris, Genny, Amy on the hands raised, but any new hands raised that just haven't updated? Marcel.

DR. REICHERT: Since I initially said that I had no problems with that, I want to, for the record, state that I agree with that, and I think it would be good, in our report, to specifically say what the -- What our ABC recommendations are comprised of, since this question came up. Thank you.

DR. BUCKEL: Thanks, Marcel.

DR. CURTIS: Marcel, when we take a break, I will copy the tables from Matt's report into our overview document, and then copy those numbers down into the table below, so that we can review them.

DR. BUCKEL: Judd, I think this is the last -- Go ahead.

DR. CURTIS: Sorry, but just to add that those tables, and their captions, have all the specifications with discards and all those other parameters that were agreed upon. Thanks.

DR. REICHERT: Thanks, Judd.

DR. BUCKEL: So I think this is the last action item for Agenda Item Number 3, and is that correct, Judd?

DR. CURTIS: Yes, that's correct, and so, Jeff, if I could just suggest that we take a quick break right now, and that will give me some time to then put the tables in here, and into the overview table below, and then we could have one quick last review before getting a consensus.

DR. BUCKEL: Okay, and so about a ten-minute break, and we'll come back at 11:00 a.m., and we will move to the SEDAR agenda item, if the council and SEDAR staff are ready for Agenda Item Number 5. Judd, is that where you wanted to go next, is Item Number 5?

DR. CURTIS: Yes, and so I would suggest that we just look at the tables, and make sure that everyone is good on that, so that we can finalize the black sea bass topic, and then we'll move into the SEDAR topic.

DR. BUCKEL: Thanks, Judd. We'll see everyone at 11:00 a.m., or hear everyone.

(Whereupon, a recess was taken.)

DR. BUCKEL: For folks that are just coming back, Judd is putting the final touches on the table for the black sea bass, so we can take a look at that before we move on to Item Number 5, the terms of reference for SEDAR, and the Item Number 4 is the management strategy evaluation presentation from Blue Matter Science, and they're on the west coast, and so they're going to do that at 1:00 p.m. our time, 10:00 a.m. their time, and that's why we'll skip ahead in the agenda, once we finish up black sea bass.

DR. CURTIS: Okay, Jeff. I think I got it all squared away here.

DR. BUCKEL: Thanks, Judd.

DR. CURTIS: I have copied in just the tables, Table 1 and Table 2, from the report.

DR. BUCKEL: Judd, we're still seeing the on-break slide. Thanks.

DR. CURTIS: There you go, and so I've copied in Table 1 and Table 2, which represent the OFL and the ABC, respectively, and those are coming from the report that Matt generated, Attachment 3a, and then, also, I filled in our table down below with the OFL and ABC projections.

DR. BUCKEL: Thanks, Judd.

DR. CURTIS: One thing to note is ABC recommendations through the year 2026, and that is post five years of the terminal year of the assessment, and that recommendation is coming from the catch level projections workgroup. If the SSC did want to see ABC recommendations beyond those years, then they would need to make that request to the center, depending on if they feel they need those numbers now or if, because of the interim analysis recommendation, then those numbers might get adjusted in 2026, or 2027, anyway. Thanks.

DR. BUCKEL: Thank you, Judd. I appreciate you taking your break to do this for us. If any members from the projection group want to chime-in, or I'm okay with this ending at 2026, if others are. Marcel.

DR. REICHERT: I'm not sure if it's possible with your copy-and-paste, but I would recommend to make sure that, in the table above this, you add "dead" to "dead discards". If that's not possible, then that's fine, and that's something that we talked about earlier. I am okay with going through 2026, but since, you know, we all know how schedules, especially in terms of SEDAR, change all the time, what will happen if things change and we don't have additional information past 2026? What will happen with the ABC starting in 2027, just as a clarification? Thank you.

DR. CURTIS: If no changes are made by the SSC, the ABC recommendation that is the last one there, for 2026, would stay on the books as the ABC for the years after 2026.

DR. REICHERT: Thanks for that clarification, and I just wanted to make sure that we, as an SSC, are comfortable with that potential scenario.

DR. BUCKEL: Marcel, good question, and so that could change folks' minds, if you want Matt to project out a few more years for that ABC. Any thoughts from other SSC members? Matt, how difficult is that for you to do? Is it fairly straightforward?

DR. VINCENT: I can do it. I just would -- I don't know, but my thoughts were that you guys had kind of already decided, in your SSC, that you shouldn't go beyond five years, and so doing that would kind of go against something that you've already decided, and that's my only thoughts, but I can do it, and it's not -- It's not too hard to do.

DR. BUCKEL: Thanks, Matt. I would like to hear from other SSC members. Amy.

DR. SCHUELLER: I mean, yes, technically, it can be done. I think that the projections workgroup had made a statement about only going five years beyond the terminal year in our report, in I think April of 2022, and so what we're doing is consistent with that. I think we're recommending the operational assessment at the appropriate time, to hopefully -- Not an operational, and I'm sorry. The interim analysis at the appropriate time to sort of bring ourselves back to the fact that we've only provided two years of numbers past this year. I don't know, and it's fine with me. I think it is a way for both the SSC and the council and the center -- Basically for everybody to look at it and go, okay, we need to come back to this and circle back.

DR. BUCKEL: I like that plan. Let's be consistent with the workgroup and not project beyond 2026, and that will provide incentive for the SSC and the center to make sure we've got the IA in place to put in a new ABC for 2027. Marcel.

DR. REICHERT: I agree with that, and I think it's consistent with, you know, our earlier recommendations, and I just want to make sure that -- That's why I made the point that, if nothing happens, then that ABC will remain in place, and so I think it's important for us to revisit this before that happens, and so I just want to make sure that we put somewhere in our notes that, because of this, we should, you know, look at that, or we should collectively look at that, before that ABC recommendation runs out.

DR. BUCKEL: Great. Thanks, Marcel. Mike.

DR. SCHMIDTKE: Thanks, Jeff. I just wanted to note the timing, as you all kind of schedule out the future events, and so, with this projection, typically amendments that are revising catch levels, in this way that this one would be -- This is going to be on a two-year statutory deadline, and I don't believe we've received the letter from the Fisheries Service yet, and so that clock has not started, but the council would have up to two years to complete the amendment that would put in these catch levels, and so that means that they would be in by the beginning of 2026, potentially, and, in considering when you are scheduling the interim analysis, or operational, or whatever you decide for the next analytical step for this stock, just keep in mind that that's when, you know, that amendment would go into place, and, also, when you're scheduling it -- Typically, as I've seen these go onto the schedule -- Like if you say we're going to do the interim analysis in 2026, that's been an indication of a start year, and not an end time, and so being sensitive to how much time those analyses take and when the actual end date would finish, and I just wanted to put out the time information for your consideration.

DR. BUCKEL: Thanks, Mike. I appreciate that. I've not looked at the timing, and if there's an analyst on that could chime-in on the time to do the IA, and I know -- I saw that Nikolai was on, and Nikolai did the one for vermilion snapper, and so he would know, but others -- If Nikolai is on, chime-in, or if other analysts could chime-in on if that's something that needs to be requested in 2025, I guess, so we would see it in 2026. I think that's the point you were making, right, Mike?

DR. SCHMIDTKE: Yes, something along those lines. Like if the SSC is fine with kind of that 2026 level being your recommendation beyond 2026, for a certain time period, or if you wanted to be able to revisit that and actually have the council have the ability to use that, then the analysis would need to be finished, so that the council can have those numbers and consider whether they're making any management changes.

DR. BUCKEL: So, Mike, if we recommended an ABC in 2026, to be put in place in 2027, is that enough time, or you're saying it takes two years from when we make the new ABC recommendation?

DR. SCHMIDTKE: It depends on how much the council includes in an amendment. If the council is just changing catch levels, and they're not making any other changes, then that can move through more quickly, but a status like this, when a stock is going from not overfished to now it's getting an overfished status, that typically is accompanied by more than just the annual catch limit changes and the ABC changes, and that normally comes with some other changes, like size, season, you know, things of that nature, and, when you start adding things to changing the annual catch limits, that's something that makes the amendments take a little bit longer, but, in this case, because it's a new overfished status, we can't take too long. We're legally required -- We'll be legally required to get it done within two years.

DR. BUCKEL: All right. Thank you for the clarification, and so I've got Fred and Marcel, and I think Shannon -- Maybe it was to my point of my question on the IA timing. Go ahead, Shannon.

DR. SERCHUK: I have a question a little bit off-topic, but I want to raise it now. Can we go back to Table 1, our catch level recommendations? Can we bring up that table? You know, if we look at the tables in the assessment, in most cases, we talk about whole weight or numbers in thousands, and, in most cases, there are not any -- There are not any things that have 0.26 on it, and, in other words, I think these -- To be consistent with the assessment, I think, if we're going to have the assessment have numbers as in Table 1, round it off to the nearest thousand, and I think that should be the way it should be in the tables as well.

I think, you know, you're talking about thousands of pounds, and then you've got 0.26, or 0.42, and can't we round those to a thousand pounds across-the-board? The same thing below, in thousands of pounds, and we're using two different sorts of nomenclature here, and it's really a little bit confusing to someone that is not used to seeing -- The assessment has them in thousands of pounds in Table 5, and my suggestion is round off those numbers. MSST is 5,460 and SSB is 8,736, and the same thing down below, and can't we put it in thousands of pounds? Thank you.

DR. SCHMIDTKE: That is easily edited.

DR. SERCHUK: Thank you.

DR. BUCKEL: Thanks, Fred. Marcel, before we go to you, Shannon had a comment on the IA. Go ahead.

DR. CALAY: So, you know, we have been working on evaluating an IA procedure for the South Atlantic, as you're well aware. I do want to say that we do typically recommend that IAs be conducted outside of the SEDAR process, but that does not mean that they don't require work, right, and so what we need to do is look at the work that is required in our schedules, and then we would be able to make an informed decision about the timing of the IA, but I think what I would recommend is that you recommend what you would like to see. The South Atlantic Council staff, or the council, will reach out to the center, and then we can negotiate the timeframe, and so that's what I would say. I would say that, if you feel it's useful to have an IA conducted in 2026, ask for it, and then we'll see what we can do with the calendars to make that happen, or that that would have to be delayed a year.

DR. BUCKEL: Thanks, Shannon. That's good to know, and so, Chip and Judd, what do you need from the SSC? Is what we have in here, this language that we have in here -- Is that enough for you to get that request in to the center?

DR, CURTIS: The language is sufficient, and, if the SSC is comfortable with the current ABC projection recommendations only through 2026, keep in mind that, as Marcel asked the question, that will be the ABC value on the books, moving forward, and, in the event that the interim analysis does have to get bumped back a year, for scheduling reasons, then that ABC value will continue to be the ABC value moving forward.

DR. BUCKEL: Thanks, Judd. Well explained. Marcel.

DR. REICHERT: This whole conversation, of course, stresses the timing, and the timeliness, issues, but correct me if I'm wrong, and we discussed that the interim analysis was kind of meant to be a, quote, unquote, health check, rather than providing us information that can lead to management recommendations, and, if it does lead to management recommendations, that would be a first for us, as an SSC, correct? I want to make sure that, if we get an interim analysis around 2026, which would be -- If it's, again, meant to be a health check, I'm not sure how much that would help us in providing the council with ABC recommendations beyond the point that's currently in the table. Do you know what I'm trying to say here?

I'm not -- I don't have a solution to this, but I just want to make sure that I'm correct in assuming that, initially, or maybe currently still, the interim analysis was not necessarily meant for us to be used for management recommendations or setting ABCs.

DR. BUCKEL: Marcel, you're correct that we haven't used it yet, but that option is on the table for us, and so, when we looked at the vermilion snapper IA, that was one of the action items, if we wanted to, you know, update the ABC based on that, and we chose not to, because of the issues that we described in the October report, but, in that same report, we said, you know, black sea bass would be a good one, given how well the model fits to the index.

DR. REICHERT: Exactly.

DR. BUCKEL: So I think the ABC is on -- Changing an ABC based on an IA is something that we can do, based on that previous language. Judd.

DR. REICHERT: Okay. Thanks.

DR. CURTIS: Marcel, and Jeff answered the question for the most part, and the only interim analysis that the South Atlantic has seen so far has been that vermilion snapper interim analysis, and, because it did not track well with the index, it was determined not to update the ABCs at that time, based on the interim analysis approach. That is an option for species like black sea bass, that does track well, and I think Shannon can correct me if I'm wrong, but an interim analysis has been used to change ABCs in the Gulf, and so there is precedent for that occurring, and it would be available to the SSC after the interim analysis is provided.

DR. REICHERT: Okay. Thanks for that clarification.

DR. BUCKEL: Thanks, Marcel, and thanks, Judd. Anne.

MS. MARKWITH: I guess this is more for clarification for me, to kind of build on Marcel's question, but, with the IA, and not having the combined index, we're still able -- Or I guess we feel comfortable making management recommendations from that, because it tracks so well, and I just want to make sure that I'm understanding correctly, and that's all.

DR. BUCKEL: Yes, that's my take, Anne, but others can chime-in if they don't agree.

MS. MARKWITH: Like I said, I'm just clarifying things in my head.

DR. BUCKEL: It's good to do that. Steve.

DR. TURNER: Thinking about what I think Mike said about the timing of the modifications to the rules with the government process, does that mean that we need to do the IA in 2025, so that it could -- Any implications of the IA might be incorporated in the plan amendment? Thank you.

DR. BUCKEL: Steve, it's a -- I guess others can chime-in, but 2025 would the trap data through 2024, and so we would be getting just four more years of trap data, I think, 2021, 2022, 2023, and 2024, and I think the trap/video index ended in 2020, if I recall correctly, and, Matt, you can correct me if I'm wrong, but I guess it's just the earlier it happens -- The earlier the IA happens, the less information there is for us to know if there's been a change in recruitment, or a change in the population, but others please chime-in. In the meantime, Mike, go ahead.

DR. SCHMIDTKE: Just in response to that last question on the timing, I would have to defer to the center, as far as how long an IA would take and be able to get through the SSC, but -- It also depends on what the desire of the SSC is, what you all want for your recommendation. If you are content with your recommendation, you know, being able to stretch out and remain at that 2026 level, and having it stretch out for, you know, some time period beyond that, for some years beyond that, then that would affect what decision you make your recommendation on, the timing of it, but, you wanted it to affect potentially the 2027 year, since that's the first year that it would be kind of repeated, then I would guess that it would probably need to be somewhere in that 2025 time period,

because we would need to start working on amendment like probably, at the latest, at the beginning of 2026, to get it done by the end of the year, so that we can potentially get it in by 2027.

DR. BUCKEL: Thanks, Mike. All right. We've got things laying on the table now, in terms of timing. Jim.

MR. GARTLAND: Thank you very much, and I just have a -- I was thinking about it, and so, if it's done in 2025, right, so that it's available for 2026, I understand that it will allow us to look at recruitment for those last two years, but we really don't have any -- We wouldn't have any idea, at that point, on any management effects, right, because I think I've read that it would -- If I'm remembering correctly, that any management would go into effect in 2025, and so, if that's the case, the update, or the interim analysis, would be done as the management is going into effect, and so all we can really look at, I think, is just whether or not recruitment is bouncing back or not, and is that true?

DR. BUCKEL: Yes, that's my understanding, Jim, and Mike just mentioned that it may be early 2026 before the management goes in.

MR. GARTLAND: Got it, and I was just thinking that it might be better to look at whether recruitment is coming back and management is working, rather than just the one of them, but that's just me.

DR. BUCKEL: Thanks, Jim. I would like to hear from other SSC members on this. All right, and so no hands, and so I will take that as we'll move forward with the ABC table with just being consistent with our projection workgroup and not going beyond 2026, with the hope that there will be time to get an IA done, and, if that can fit into the center's schedule, then potentially impact the ABC in 2027, or at least by 2028, and are folks comfortable with that? I will take no hands as you're comfortable, that everybody is comfortable. Judd, any other questions on black sea bass?

DR. CURTIS: No, and that covers all the action items for black sea bass. I don't see any other hands raised currently, Chair, and so we can proceed on to the next topic.

DR. BUCKEL: Okay, and so we've got a half-hour until our lunch break, and hopefully we can knock most of -- Or get a good chunk of Item Number 5 done.

DR. CURTIS: We're going to move on to the SEDAR topic, and Julie Neer, the SEDAR staff, will be presenting this. Julie, if you're online, I would recommend that maybe we do the yellowtail snapper, and then we can tackle red snapper after the MSE this afternoon, if that sounds good with you.

DR. NEER: That sounds perfect.

DR. CURTIS: All right.

DR. BUCKEL: Thanks, Judd and Julie. Chris.

DR. DUMAS: Thanks. Before we move on, I would like to make one more comment about the black sea bass, getting back to Fred Serchuk's earlier point about the discards being an issue, and

so usually -- Let's say you had a -- So we're thinking that the recreational non-target, non-target discards, are a big problem, in this case, and that a lot of them happen in inshore, or shallower water, fisheries, with relatively small fish that are being discarded because they're already, I guess, under the size limit, or they're undesired for some reason, but probably because they're too small.

Let's suppose there was a recreational season for those fish, and these are fish that are being caught, I guess, when they're too small, and what if we change the season, and shifted the season more so that it was earlier in the season, so that all the fish were smaller that were caught, and they would still be discarded, and let's say -- Normally, when you compact a season, anglers will shift when they take their trips, and will shift them into the compacted season, so that you might have the same number of trips, the same number of hooks in the water, ultimately, the same number of fishing days, but they just happen in a compacted season, and so, normally, you would have the same number of discarded fish, all else equal, but, if we compacted the season earlier in the season, even if we had the same number of trips, the same number of anglers and the same number of trips, and the same number of dead discards, those dead discarded fish would be smaller.

They would be smaller fish, and each of those fish have a smaller expected survival, compared to larger fish that were still under the size limit, and so, even if we had the same number of discards, it would be -- It would have a beneficial impact on the population if those discards were smaller undersized fish, and so I'm comparing, you know, undersized discards versus smaller undersized discards, and, if we're able to shift the effort -- Even if it was the same amount of effort, angler days, and discards, but those discards were of smaller fish, each of those fish have less chance of survival anyway, and so there's a smaller impact on the sort of growth trajectory of the population, and so that might be a way to help the population, even if the number of discards was not changed, if we could move more of the effort into the earlier part of the season, when the fish are smaller, and that's all, and folks may have comments on that. Thanks.

DR. BUCKEL: Thanks, Chris. It's not always -- You know, it varies by year, and sometimes, some years, the majority of the live releases are in federal waters, and it's never -- I don't remember a year where those state-water live discards were the majority, and then, of course, you have the multiple age classes, and then, in state waters, trying to have a fishing season would be difficult, but we can revisit that over a beer in April and talk about it some more. Let's move on to SEDAR. Julie, you're up with the presentation on that for yellowtail snapper.

DR. NEER: Sure, if somebody passes me control.

## SEDAR: TERMS OF REFERENCE, SCHEDULES, AND PARTICIPANTS FOR YELLOWTAIL SNAPPER

DR. CURTIS: I will pass you control in just a minute, Julie, and so, just briefly, for the SSC, you've gotten the overview there, kind of the tasks for each of these different assessments, and we'll get into a more involved conversation after lunch on the red snapper assessment type, and recruit members for that, but, for now, we'll just -- We'll talk about the yellowtail snapper, and I guess Julie will probably fill you in with more details, but we're also looking for participants for the yellowtail snapper -- Well, there's going to be a topical working group that looks at integration of the MRIP data, or the Florida Reef Fish Survey and MRIP data, for the next assessment, and so

we'll be looking for members, and so think about if you would like to volunteer for that topical working group, and with that, Julie, I will hand it over to you and make you the presenter.

DR. NEER: All right. Good morning, all. I will be quick, because I know we're getting hungry, and people want to go to lunch, and so what we're talking about here today, right now, is the request for a review of the terms of reference for the southeastern U.S. yellowtail snapper operational assessment, and it's going to be SEDAR 96. It's going to begin relatively soon-ish, May-ish, and we hope to get it done by the end of the year.

Just a quick summary of how we got here, and, if you all recall, not too long ago, you received what was called a catch analysis, or an interim analysis, based on catches from the State of Florida that was put in place because the last assessment SEDAR 64, by the time that was done, and the councils were able to move forward, or starting to move forward, with management, the landings streams and the terminal year were quite old, and so the State of Florida produced a catch analysis. That information came to the council just in time, as they had started to work on the amendments, for the new information on the MRIP issues, or potential issues, arose, and, as such, the councils, and this is a joint assessment between the Gulf of Mexico and the South Atlantic, decided that they would like to investigate the potential of using the SRFS, the Florida State Reef Fish Survey, as an alternative to the MRIP landings, since almost all of the landings do come in the State of Florida, and that survey does encompass both sides.

After some negotiation with Florida, who will run the assessment, as well as the Science Center, who does have to provide some data for this operational assessment, it was agreed that that's what we're going to do, and so they have snuck this in here for 2024. Just so you know how that impacts the schedule, it's that we are postponing hogfish, which was supposed to start in 2024, and it will now start in 2025, and so those of you who volunteered to participate in hogfish -- Once we have a new schedule for that, we will reach out to you and make sure you're still willing to do that.

So that's how come we now have sort of a last-minute operational assessment for yellowtail snapper that's being put on for your consideration. What you have in front of you is a copy of the terms of reference that were put together for the operational assessment. As Judd pointed out, the key focus that we need is to look at whether the State of Florida's State Reef Fish Survey information would be useful to provide that -- To fill that spot, as opposed to using the MRIP data, which is currently in the 2022 interim analysis.

The terms of reference that you have in front of you are fairly straightforward, because the main thing that we're looking at is perhaps potentially swapping out that one dataset for the other and then update all the other datasets, because, in that previous 2022 catch analysis, interim analysis, they did not update all of the data, and they only updated the landings stream and one other piece, and so this would be a full update of all the data involved as well.

We're requesting that you guys take a look at these terms of reference, see if you have any comments, questions, concerns, additions, those sorts of things, and then get your feedback, and then, once I have your feedback, the Gulf SSC will also be looking at these terms of reference at their meeting on February 28, and so what you see here is the terms of reference, and I will just shut up for a minute and let you look at it, and tell me when I need to scroll, and let me know if you have comments or questions, and Judd has a Word version of this, and so he can type up any of your questions or comments as we go.

Just as a quick FYI, these terms of reference were based off of the ones that you guys reviewed when they did that interim analysis in 2022, and so they're fairly consistent, and similar, to what you looked at at that time.

DR. REICHERT: Can I ask a quick question?

DR. NEER: Yes.

DR. REICHERT: This may be semantics, and the current language may be deliberate, but, when I looked through this, under 1, especially since the State of Florida Reef Fish Survey is a key in this, it says "explore", and I thought that terminology may possibly be a little vague, and perhaps add to the language, "and consider use, where appropriate, in the updated assessment". That's a suggestion.

DR. NEER: I think that's a fine addition.

DR. BUCKEL: Yes, I agree. Thanks, Marcel. Other edits for Julie?

DR. NEER: I'm going to scroll up a bit. There's not much more. Be aware that the SSC, I believe, is receiving a full presentation on the SRFS survey at your April meeting. The Gulf has been using it for quite some time, and are fairly familiar, but we understand this would be sort of the first time that you guys are potentially endorsing something that might use this approach, and I believe you're getting a presentation -- Judd, you said in April? So you will have more details on this prior to actually receiving the assessment as well.

DR. CURTIS: Yes, that's correct. We'll have, on our agenda for April, a more in-depth look at the Florida State Reef Fish Survey for the entire SSC, and we'll have some discussion of that before we actually apply it to this assessment.

DR. BUCKEL: Since we have two SERFS and SRFS, we'll always have to qualify this SRFS as Florida SRFS.

DR. NEER: Yes. Sorry.

DR. CURTIS: We've got Fred Serchuk, and sorry that you can't see the hands raised document right now.

DR. BUCKEL: Go ahead, Fred.

DR. SERCHUK: One small issue for me, and maybe you can provide the background, but, in Point 2, the second bullet, it says use the geometric mean of the previous three years of fishing mortality, and is that standard, to use the geometric mean when averaging fishing mortalities over years? Was there a special reason why they used geometric mean, as opposed to just the arithmetic mean?

DR. NEER: You said under 2?

DR. SERCHUK: Well, under the second bullet under 2. Unless otherwise recommended, use the geometric mean of the previous three years --

DR. NEER: I see. I'm sorry. Yes.

DR. SERCHUK: I'm just wondering, and was there a special reason why the geometric mean was put in there, as opposed to an arithmetic?

DR. CURTIS: Fred, I don't know the rationale for using the geometric mean versus the arithmetic mean, but that is a standard practice for estimating F rates, is using the last three years of the geometric mean, for all the assessments that we've been seeing.

DR. SERCHUK: Okay. That's fine then. Thank you.

DR. CURTIS: I have Alexei, to that point.

DR. SHAROV: Fred, I guess the purpose here is to sort of capture the predominance, or the level of fishing mortality, given that there is, obviously, variation, interannual variation, in F estimates, just because of, well, the variability in the catch and the year-to-year dynamics of the stock, and so that's the attempt to sort of describe what is more likely the F to be, but I always was critical of this approach when you apply this to like a three-year -- To the data that contain only the three points, and I thought it was of limited value, but, nonetheless, that's what I see being used, and that's the rationale that I think is being used here, although I think it's sort of limited support rationale, but, nonetheless, that's what is behind it.

DR. BUCKEL: Thanks, Alexei. All right. Other edits for the yellowtail snapper terms of reference? If there are no hands, I think it's time to -- Judd, the next thing we need for yellowtail are participants, and is that right?

DR. NEER: Yes.

DR. CURTIS: That's correct.

DR. NEER: Judd, do you have the schedule, or do you want to give it back to me?

DR. CURTIS: I've got the schedule. I will bring it up. It's on that same document.

DR. NEER: Yes. Just keep scrolling down. While Judd is fixing this, I will let you guys know that, because this is a joint assessment, and this two-part review process -- As you guys just saw recently, but with something else, where you were the second SSC, and the Gulf SSC will be the second group to review this, and so they can make additions, but they can't take away any of the things that you guys have already approved.

Okay, and so this is the schedule. It is an operational assessment with one topical working group, and the topical working group is what we're calling the recreational landings topical working group, and that group will focus on looking at using Florida SRFS in place of MRIP, and that requires sort of producing a series that goes back in time for this species, because we only have SRFS data for three years within the Atlantic zone, and so that's one of the things that this topical

working group will be tasked with examining and making a recommendation on. In addition, if we in fact move -- If it's recommended to move to the Florida SRFS from MRIP, then you will also perhaps get a chance to weigh-in looking at length comps and any other information that might be available that might be needed for the analysts to do the assessment for.

The topical working groups meet solely by webinar, and there are currently two to three webinars scheduled, and they'll start with one as a scoping webinar in May, late May, and then one to two additional webinars in late August, and then, if needed, late September, and so the participation is fairly limited. It's possible that there will be a need for one additional sort of offline webinar, if the analysts have any questions or need additional feedback, but the public webinars -- There are at least two, or potentially three, and then there's always the potential for one more, if needed, if the analysts need to reach out and work with people offline, and so it's not a huge, heavy lift, and I know you guys are quite busy with a variety of other things, and so, if we could get some people who would be willing to serve on this, it would be great.

DR. BUCKEL: Go ahead, Jim.

MR. GARTLAND: I was just going to say that I would be happy to be involved.

DR. BUCKEL: Thank you, Jim.

DR. NEER: This topical working group will be made up of both people from the South Atlantic and the Gulf, both SSC members and potentially AP or other stakeholders as well.

DR. BUCKEL: In our MRIP presentation, we heard a lot about comparing the State Reef Fish Survey in Florida to MRIP, and so this will be part of this group, is exploring that State Reef Fish Survey for use, and so, if folks are interested in those recreational surveys, this is a good one. Kai. Kai, you might be muted, or maybe you just raised your hand to volunteer.

DR. LORENZEN: Yes, and I was muted by the organizer, apparently, but, yes, I am volunteering myself.

DR. BUCKEL: Thanks. We have Florida represented on this. Steve.

DR. TURNER: I would be willing to assist. I did a lot of work with the MRIP calibrations, and so I'm sure there is going to be a lot of calibration associated with this.

DR. NEER: Yes.

DR. BUCKEL: Great. Thanks very much, Steve. I would thank the three of you. Is that what you need, Julie, or are you hoping for one more?

DR. NEER: No, and I think that's good, and so we have a little bit of wiggle room for additional AP or other stakeholders who may wish to participate.

DR. BUCKEL: Excellent. Thanks so much, Jim, Kai, and Steve. I really appreciate you volunteering for this. Judd, is there another action item here related to yellowtail?

DR. CURTIS: No, and we're covered under yellowtail. I want to hold off on the red snapper discussion for SEDAR until after lunch, and I do, if it's all right, Chair, while we're on kind of the SEDAR, I wanted to tackle this Other Business item of the SEDAR 82, gray triggerfish, if that's all right with you, Chair.

DR. BUCKEL: Definitely. Yes, let's knock as much out as we can before lunch.

## SEDAR 82: GRAY TRIGGERFISH

DR. CURTIS: The SEDAR 82, gray triggerfish, review workshop is happening in Atlantic Beach on March 12 through 14, and our two SSC members on the review panel are Alexei and Anne Markwith, and so thank you for volunteering for those positions. We are still in need of a chair for that review workshop. Ideally, this would come from the SSC members, from the SSC rosters, and so you would not be involved in the review, but you would be involved in chairing the workshop, which would involve taking notes -- Facilitating the meeting, taking notes, and then helping to produce a report after the workshop has concluded. As I said, we're still looking for someone to fill that role. If anyone from the SSC is interested, we would greatly appreciate it, and I guess raise your hand. Raise your hand if you have clarifying questions as well, and then raise your hand if you want to volunteer. Thanks.

DR. NEER: Just a note that, since the chair of the review workshop is not actually a reviewer, it can be someone who has previously participated in earlier stages of the process, and so if, say you were involved in data, and you would like to see how it all came out, you can serve as the chair, and so the chair is not a reviewer, and so those of you who thought that you couldn't possibly do it, now you can possibly do it.

DR. CURTIS: Thanks, Julie, for that clarification. That's absolutely right.

DR. BUCKEL: Marcel.

DR. REICHERT: Since no one else is jumping up and down to volunteer, I looked at my schedule, and I am available to assist.

DR. BUCKEL: Thanks so much, Marcel. I appreciate that.

DR. CURTIS: Okay. Well, great. Thank you, Marcel, for your service. Chair, I don't want to tackle any of the Other Business currently, and so I think this is a good time to break for lunch.

DR. BUCKEL: Okay. I did see, in the last -- In Agenda Item Number 5, you have participants for the yellowtail snapper assessment, and is that something you want to hold off on?

DR. CURTIS: Sorry, and that's a typo. That should be just for the red snapper. That's no longer relevant.

DR. BUCKEL: All right. Great. All right, and we'll have a little extra -- Go ahead, Steve.

DR. TURNER: Looking at the dates for the yellowtail snapper topical working group, I may or may not be traveling during one of those, and so perhaps it's sensible to see if we could pick up another participant, in case I'm not there.

DR. BUCKEL: Julie, how does that work? If someone can be there for two out of the three, is that --

DR. NEER: That's fine. I mean, ideally, we want someone to come the whole way. If he's unavailable for one of them, you know, that's unfortunate, but I'm glad -- That's why we like to have at least three people, so at least hopefully we would have two additional people, plus we'll have Gulf SSC members as well.

DR. BUCKEL: Great.

DR. NEER: But, if anyone else wants to volunteer, we'll take them. You can ponder and let Judd or Chip know in the next couple of days, and that would be great.

DR. BUCKEL: Thanks, Julie, and thanks for letting us know, Steve. All right. If there are no other hands raised, we'll go ahead and break for lunch, and we'll come back at one o'clock for the MSE presentation. Thanks for a productive morning, everyone.

(Whereupon, a recess was taken.)

DR. BUCKEL: All right, everyone. Welcome back to our February 2024 South Atlantic Fishery Management Council SSC webinar. We are on Agenda Item Number 4, the Snapper Grouper Management Strategy Evaluation, and we're going to get a presentation on that from Blue Matter Science, and Judd is going to do an intro here in a second, but, before Judd does that introduction of our speaker, I just want to point you to the action item. We're going to be providing feedback on the methods and potential uncertainties, but, if you look up at the last paragraph, there's a little more detail.

We're asked to review the updates made to the snapper grouper MSE, discuss potential uncertainties with the model framework and data inputs, and how these uncertainties may affect model performance. Just so you know, this isn't the last time you'll see it, and we'll have an opportunity to review the final operating models produced by the MSE process in a later meeting, but now we're given an opportunity, which is great, to weigh-in partway through this process, and we appreciate that, and, Judd, I will let you introduce our speaker from Blue Matter Science.

## SNAPPER GROUPER MANAGEMENT STRATEGY EVALUATION

DR. CURTIS: Great. Thanks, Jeff. You covered the objectives and the action items for the SSC, and so we have Adrian Hordyk presenting. Him and Dr. Tom Carruthers from Blue Matter Science have been the ones working on the snapper grouper MSE that you've seen one iteration before, and so we've got an update now on this subject, and so, Adrian, I'm going to give you the presenter mode, and you should have received a prompt just now.

DR. HORDYK: Okay. How's that? You should be able to see the presentation now.

DR. CURTIS: We've got the presentation mode, and we can hear you loud and clear.

DR. HORDYK: Fantastic. Thanks, Judd, and thanks, Chair, and thanks, SSC, for this opportunity to present to you our second progress report on the management strategy evaluation for the South Atlantic snapper grouper fishery. I've got three main objectives for this presentation, to provide you with an update on the work that we've done so far to outline our plans for the next steps to bring this project to completion, and then to gather the feedback from the SSC regarding the work that was done so far, any suggestions for improvements on that, and also your thoughts and suggestions for our plan to complete this work.

I've got quite a lot to get through today, and there's seven sections to this talk. The second and the third are probably the longest, and I'll try and move through it fairly quickly, so to allow plenty of time that we can use for discussion, and we can go back to any of these sections and spend more time on them, and so we'll get started with the project overview. This is just to provide a general overview, and a reminder, of what we've been -- What our objectives are and what we're intending to do with this project.

We've got a couple of objectives. We want to develop a framework to construct multispecies operating models, and we want to use those operating models to evaluate different potential management strategies for the South Atlantic fisheries, and we want to evaluate those results against established performance metrics, and that's kind of the MSE process, and then, once we've sort of developed this whole framework to do these steps of the MSE, then we can extend the analysis to include additional species. Currently, as you can see, we've got two species, the red snapper and the gag.

The figure on the right there shows just the general steps for the MSE process, with a model fitting procedure, where we create our operating models, and then we use those operating models to evaluate different management scenarios. We evaluate the results against the performance metrics, and we present those as results of the MSE, and so what we've done basically so far is we've made a complete first pass at all these steps. We've built the framework to do this whole process, and we have a working framework that we can use to demonstrate the effectiveness of various management options, and we can show you how the performance can be evaluated.

Our next steps are really about refining this whole process. We want to identify specific management options to include in this analysis, specific management options that the council wishes to investigate, and we want to finalize some additional uncertainties and system hypotheses, and you will see, later, that we've got a list of them now that we've included and built into the framework. We want to revise those, and refine those as necessary, and we'll add in any of the important ones that haven't been included so far, and I think we're getting fairly close with this, but we also need to revise the performance metrics, as needed.

We'll start with an overview of the model structure, and I will go through the process of generating the operating model. I will provide an overview of the dynamics of our base case operating models, I will spend a bit of time talking about the spatial structure, and then some of the assumptions, particularly the recruitment deviations for the projection period, and then the last part I will talk about is some of these alternative system hypotheses, or alternative operating models.

Before I get started on each section, I just wanted to remind you that we have a technical specifications document that is available online, and that's a living document, and it continually gets updated to reflect the current state of the MSE process, and so this link here at the bottom will take you there.

Basically, everything that I'm covering, at least in this section of the talk, is documented, and all the figures that I'm going to show here come out of this document, and so this is a good place if you want to sort of read anything more, more details, about some of the things that I'm covering today, and it's all in this document, or, if there's things there that you have, at any point in time, either concerns with, or there's information that's missing, feel free to contact me, and my email is on this document as well, and email me, and we can have a discussion about your suggestions for either improvements for the documentation or for the MSE process.

The basic process for generating operating models will take the Beaufort Assessment Model assessments, the BAM models, and bring them into openMSE, and that's our framework that we've developed for conducting management strategy evaluation, and so what you basically do is take the assessment outputs and combine them together into a multispecies operating model.

The one challenge we had, early on in this process, was, for the assessment purposes, the fleets in the assessment models were structured into landings and discards, and there are seasonal models, particularly for the red snapper, that has a fairly short fishing season and a longer season where there is no retention, and, for the MSE purposes, we need to separate the discards that occurred in the off-season, when everything was discarded -- We need to separate those from the discards that occurred during fishing, and so particularly for the gag, and they have a size limit, and so there's going to be discards even when the fishing season is open, and so we had a little bit of work to do to restructure the operating models from just landings and discards in the assessment to on and off-season fleets within the operating model, which each one had landings in the on-season, and discards -- Landings and discards, sorry, in the on-season and just discards in the off-season, and we did through selectivity and retention curves.

This is basically showing -- These figures are showing that process, and I won't go into all the details of this, and it's described in detail in the technical document that I just referred to, but, basically, we went from -- This is the assessment on the left-hand side, where we had a commercial handline fleet, for example, and then the handline fleet for discards, and we just had to calculate the proportion of the discards that occurred during the off-season and calculate the -- So we had an on-season fleet here, where we had to retain catches and whatever discards that occurred during the on-season, and an off-season fleet, where everything was discarded, and so it's the same information, but it's just essentially some of the discards for each fleet, and the fishing mortality for the discards gets brought into the on-season fleet.

That results in -- This is generated by the operating model, and it's the same overall catches. Sorry, and this is the landings and discards, landings in the blue and discards in the yellow, for the three fleets, three fleet types, for the red snapper. That's the columns, and these rows are the on-season and off-season, and so you can see there's large amounts of discards, particularly for the general recreational fleet in the off-season, and there is only small amounts of discards in the on-season.

The reason this is important is because, in the MSE, we might wish to change the length of the season, the on-season, to make it longer or add a size limit and so on, and so, again, it's important

to be able to distinguish between what fish are being discarded during the fishing year, due to management regulations, for testing the MSE, which is something we couldn't do if we hadn't separated them out this way.

This is exactly the same process that occurred for the gag, and I will just show you this figure here, and this is sort of the same information. This has a dive fleet as well, and there is no off-season, and there is no discarding. Note here the different Y-axis, the scale on the Y-axis, for the off-season, and so, again, all the discards occur, or almost all the discards occur, in the off-season, and you can see the scale is much lower. It's the maximum of about a hundred tons or so, compared to, and I will just flip back a slide or two, and the scale of the discards is pretty similar for the red snapper, and so discards is much less of an issue, in terms of the magnitude of the discards, for the gag grouper.

This plot here shows the biomass trends that are generated by the operating model, and, essentially -- This is red snapper here on the left, and gag on the right, and, essentially, these match almost exactly the same as the assessment, and so this is just confirmation that the operating model that we're using to evaluate these management procedures for projections reproduces the same dynamics, population dynamics, from the assessment. Once it's gone through that whole process, we generate the fisheries dynamics that are described in this operating model, and compare those with those that came out of the assessment, and they're basically the same, which is confirmation that we haven't -- That we're still running the same fishery, the fishery as described in the assessments.

Spatial structure, this is the part where the MSE technical team, with the input from the advisory panel, developed, or defined, six areas for the spatial structure for the MSE, and so there's a nearshore and an offshore region, and the nearshore is areas that are less than a hundred foot, and offshore is everything beyond that, and then three regional areas, North and South Carolina, Georgia to Cape Canaveral, and then Cape Canaveral to the southern part of the Florida region which is included in the South Atlantic management area.

What we did then was calculate the relative size of each of these six areas, and that's shown here in this table on the right-hand side. That's just calculating it as the proportion of the total surface area in the colored region here, and the proportion of that is each of these numbered areas, and so you'll see that the inshore, or the nearshore, Cape Canaveral to Florida region is the smallest, and it's very small compared to the rest, and the largest area is the offshore region in North and South Carolina.

There's a few things that we have to define when we bring spatial structure into an operating model. The first thing is what is the distribution, the natural distribution, or the unfished distribution, of the stocks across these three latitudinal regions, and then the second thing is how are they distributed across the two depth areas, and, essentially, we need to map out in the unfished, the model that's initialized in the unfished state, what the distribution is of the stock is across these six areas. I will talk first about the latitudinal distribution, and then we'll look at depth, and then how those combine together.

There's not a lot of information available on the unfished distribution of these fish stocks, and so we used any available data we had in the literature to estimate the relative distribution of these stocks, and it's important to remember here that there is uncertainties in this, and there's always

going to be uncertainties, particularly in things that have got distribution, spatial distribution, in the stocks in the time before fishing, and these uncertainties can be evaluated in alternative operating models, and they will become -- The spatial structure becomes particularly important when we want to evaluate spatial management controls, closed areas and so on, and it depends -- How important this spatial structure is depends on how significant spatial closures, and spatial management -- How important they are in the list of management procedures that we're going to consider in this MSE.

For now, what I'm going to present is our base case assumptions for the spatial structure, and I would appreciate any of your advice, your feedback, back on these, and we want to try and get sort of a best first -- Sort of a best guess at what the spatial structure should be, and it would also be useful to hear if there are any alternative hypotheses that could be considered in alternative operating models.

For the red snapper, in terms of our latitudinal distribution of the abundance, we used -- Our first source of information was from the SERFS survey, and that's shown here in this figure on the right-hand side, and the red snapper are -- The highest abundance was in the Georgia to Cape Canaveral region, and so that's Areas 3 and 4, and the abundance, and this is the man from 2017 to 2022, and the abundance in the northernmost area, North and South Carolina, was about a quarter, one-quarter, of that in the area below it.

This SERFS data suggests that the abundance in Areas 5 and 6 is about 7 percent of the middle area, but the SERFS survey doesn't extend the full range of Areas 5 and 6, and it stops around here, and so it doesn't include a significant proportion of this area, and so it's going to underestimate the abundance in the southernmost region that we consider in the MSE.

We looked at the SEDAR 52, which is the assessment of red snapper from the Gulf of Mexico, and they estimated the unfished biomass in the east of the Gulf of Mexico is about six-times higher than the estimated biomass of red snapper in the South Atlantic region, and so this suggests that a decreasing abundance -- This suggests a decreasing abundance of red snapper with increasing latitude, which is also supported by that SERFS data that suggests that the abundance, the relative abundance, of red snapper is significantly lower in North and South Carolina than further south.

For this base case operating model, we assumed that the relative abundance in the Cape Canaveral to Florida region was twice as high as that in Area 3 and 4, and so, based on the SERFS data, we said that the North and South Carolina abundance is a quarter of the Georgia to Cape Canaveral abundance, and then we're assuming here that the base case operating model -- That in Florida it's twice as high as the Georgia to Cape Canaveral region. The relative abundance should sum to one, and it's been rounded here, and so it may not exactly sum to one, but it does in the operating model.

We did the same thing for gag, but this showed the reverse. The SERFS data showed the reverse pattern, where you have the higher abundance in North and South Carolina, about two-and-a-half-times higher than that from the Areas 3 and 4, and, again, for the same reasons, it's probably going to underestimate the abundance in the Florida region, and so we looked at this paper by Gruss et al., and they report that gag are most common in the northeast region of the Gulf of Mexico, compared to regions further south, and further southwest, and so this suggests a reverse pattern of increasing abundance with increasing latitude, and so, for this base case operating model, we basically did the same assumption, but we assumed a reverse pattern, and so we assumed that the

abundance in the Cape Canaveral to Florida region was half of that of the Georgia to Cape Canaveral, and so, for red snapper, we have an increasing abundance as it goes -- A decreasing abundance with increasing latitude, and gag is the opposite, increasing abundance with increasing latitude.

The second part of this is to look at the unfished distribution of stocks across the nearshore and offshore areas, and, for this, we looked at the literature mainly, because there were some studies from fishery-independent surveys, this study by Mitchell et al., and they found, for red snapper, that most recruitment occurs in the shallow, nearshore waters, and there is a higher density of recruits in the nearshore waters, but, after about three years, or about fifty centimeters, they didn't find any detectable difference in the depth distribution of red snapper by age or length, and there's equal density across these depth areas.

Following that study, in the base case operating model, we're assuming that the recruits have a higher density in the nearshore, and then it just literally declines to about age-four, and, after that, there's equal density in the offshore and nearshore regions.

For the gag, we couldn't find much information in the literature on the distribution by depth for gag in the South Atlantic region, but this study by Carruthers et al. in 2015 was useful. They did a spatial population dynamics model to estimate the fraction of unfished individuals by age class in the nearshore and offshore regions of the Gulf of Mexico, and so they found that the juvenile gag are most likely to be the nearshore region, but then move offshore, because they move offshore as they increase with age, and so we based the assumptions for the base case analysis on this study, which assumes that the unfished distribution of gag in the South Atlantic region is similar to that in the Gulf of Mexico, the same distribution that gag -- Basically, the recruits are in the nearshore, and they move offshore as they get older, with fewer older, or larger, individuals found in the nearshore region.

These two pieces of information were combined together to calculate the relative distribution by depth and area in the latitudinal areas for each age class, and so, here, this figure on the left-hand side shows the relative distribution, and they should all sum up to one for any age class, for each species, across areas, which the regional areas are the colors, and the nearshore and offshore are in the columns here, and age class is on the X-axis.

Now, note that, for example, we said that gag recruitment was most likely in the nearshore, but it doesn't necessarily look like that in this figure, but the reason that it could be a bit deceptive here is because of the fact that -- Let's just say, for the gag, most of the recruitment occurs in the nearshore waters, and there's a much higher density of recruits in the nearshore waters, but, because the offshore region is so much larger, you will see here the actual distribution, the actual number of recruits in the total offshore area, is higher, because there's a much larger area, and so you have more recruits, but at a lower density, whereas you can't quite see that in this figure. Because this area is much smaller, the relative number of recruits is much higher, and so you have a large density of recruits in the nearshore water, and then, fairly quickly with age, for the gag, they move offshore, and they consistently stay there, according to this model, and something similar is happening with the red snapper.

You can see here that, by the age of three or four, there's an equal density of them on the nearshore and offshore waters, but, again, because the nearshore waters are so much smaller, the actual number is much lower, or the actual proportion is much lower.

They also talk a little bit about the recruitment process error in the projection period, and recruitment process error is typically the biggest source of variation in the natural stock dynamics in the future projections. It's usually the largest source of variability when you project a model forward. In our base case operating model, we assume that the recruitment deviations and the projections have the same characteristics as those in the past, as estimated by the assessment, and so we estimated -- I will show you how in a second, but we estimated the pattern in recruitment deviations, the deviations around the expected recruitment from the stock-recruit relationship. We estimate the statistical properties of those deviations, as estimated in the assessment, and we use those to generate recruitment deviations for the forward projections, and so they have the same statistical properties, the same variance.

Because there's two stocks in this multispecies operating model, we wanted to look if there was any pattern in trends, or any correlation in recruitment deviations between the stocks, and so we calculated the variance-covariance matrix of the log recruitment deviations, and you can see it's plotted on the right-hand side for the red snapper and the gag grouper, and there is some evidence that higher red snapper recruitment, or higher than average, is correlated with lower than average recruitment for the gag grouper.

We use this information to generate recruitment deviations for the two stocks, by sampling from a multivariate normal distribution, using this correlation matrix, or covariance matrix, and we sample from a truncated normal distribution, just truncated at two standard deviations, and these are to prevent values that are well outside those observed in the past.

Otherwise, you can get quite rare, but really extreme values, where the predicted recruitment deviation in the future is significantly outside of the bounds of what has been observed in the past, which is -- We discussed this as part of the technical team, but we decided to try and truncate it within two standard deviations, and 95 percent of the confidence intervals, so that the projected recruitment deviations more or less don't have any more extreme values than what we've observed in the past. Then we also applied, or estimated from the historical recruitment deviations, any autocorrelation, and we applied that autocorrelation for the recruitment deviations going forward.

These figures show the red snapper on the left and the gag on the right, and they show historical recruitment deviations as estimated by the assessments in the black, and then the blue is the projected, and so these are generated by the model, the projected recruitment deviations from the twenty-year projection period. There is nine different simulations here. In our model, we have like a hundred simulations, and I'm just showing nine of them here for each stock, and the black is identical in each of these plots, because that's the past, which is the same in each operating model, but the blue is -- Each single simulation, each of the nine, you can see what the recruitment deviations look like in that simulation.

These are multiplicative recruitment deviations, and so this is a multiple of the expected recruitment from the stock-recruit relationship, and so, for example, in the first simulation, Number 1, in 2027 or something, and that's seven or eight years into the projection period, the recruitment in that particular year will be about three-and-half-times higher than what would be predicted from

the stock-recruit relationship, and you see, a couple of years later, it's significantly lower, less than 50 percent of what was predicted by the stock-recruit relationship, but each simulation is different. Each of them is a random draw from that multivariate model that I've described, and you can see there's a fairly high autocorrelation for the two stocks, particularly for the gag, where, if it's a high recruitment deviation in one year, there's more than likely to be a similar high in a following year, rather than just random noise, where it bounces around.

Then you see, in some cases, it does still fall outside the observed range, particularly for the gag grouper, in the past, but, if you we looked at a truncated normal, you will see that there's actually several years where it's much, much larger than this.

Additional operating models, and these additional operating models, or alternative operating models, are intended to span the range of critical uncertainties in our knowledge of the system, and so what I've described so far is our base case operating model, which is intended to get -- Other than the spatial dimension, which we've added to it, it's directly from the stock assessments, and so they are intended to reflect our best understanding of the stock dynamics, but there are a lot of uncertainties in these understandings, and so these alternative operating models are intended to be departures from our base case that explore different critical uncertainties, and so the aim here is to identify uncertainties that have the greatest uncertainty on management performance.

It can be -- In some cases, it can have large uncertainties in certain aspects of the operating model, but they may not impact management performance, in which case they're not important uncertainties for management, or at least this aspect of management, and so the idea is to try and identify the uncertainties that have the greatest impact on management performance and to find management options that are robust to those uncertainties, so we can find management options that still perform well, given those uncertainties, or to prioritize research to either reduce those uncertainties, if possible, or, if we notice that these are uncertainties, particularly uncertainties about the future, that are important for management, try to develop plans to detect whether those conditions will occur in the future, so that we can detect them in time and act fast to changing the management strategy, if needed.

These are the alternative operating models that we've developed so far, and there is seven of them. This is a list of all of them. We have our base case, Operating Model Number 1. Models 2 and 3 consider alternatives to the natural mortality rate, and this was flagged, for both the assessments, as one of the most important uncertainties, and that was considered as a sensitivity test for the two assessments, and so, for Operating Model Number 2, we changed the natural mortality rate to the lower value that was considered in the assessment sensitivity test, and we rerun the assessment, and so we produce a new operating model, using the same process that I described above for the base case, but now the assessment is no longer the -- The model, sorry, that we generated is no longer directly from that base case from the SEDAR documents, but it's basically one of the sensitivity runs.

Operating Model Number 3 is the same thing, but we used the higher range for the natural mortality considered in the two sensitivity tests, and so these Operating Models 2 and 3 span one of the most important sensitivity tests that was identified in the assessments, lower and higher values for the natural mortality rate.

Operating Model Number 4 considers some uncertainty in the reported recreational catch. There has been some information to suggest that perhaps the recreational landings that we used in the assessment were overestimated, and so, remember, with all these operating models, we're not really necessarily worried about whether it's true or not, but we're worried about, if it was true, will it happen in management, and so what we did here is we reduced the recreational landings in the assessment by 40 percent and reran the model again, and we can see whether that operating model generated by this assumption will have any impact, or any different significant impact, on the performance of our management procedures versus our base case.

Operating Model Number 5 considered future productivity changes due to climate, and so we looked at increased process error in recruitment. Basically, what I just showed you before, we had those plots of recruitment process error in the projections, and what we did was we increased the recruitment process error in the future, so that it would be more variable, so that the increases would be larger, and, when it's higher than average, it would seem to be higher, in this particular operating model, than the base case, and the same thing if it's lower than average, and it's going to have more extreme values in Operating Model Number 5 than Operating Model Number 1, the base case, and so it's going to be more variable in the future, due to changes in the environmental conditions, for example.

Operating Models 2, 3, and 4 all were about rerunning the assessment models with different assumptions, so that it changed the historical dynamics predicted, but the rest of them, Operating Models Numbers 5, 6, 7, and 8, are all about the dynamics in the future, and so the historical to those come straight out of the assessment models, but we're considering uncertainties that are in the projection period.

Operating Model Number 6 considers future recreational capacity, increases in capacity either due to latent effort now or a technical creep, something like that, and so it's a base case operating model, but, in the future projections, the recreational effort is increased by 2 percent per year, and so it's gradually creeping up for the general recreational fleet.

Then Operating Models 7 and 8 -- I haven't fully specified these yet, and the idea is to look at uncertainties in the spatial dynamics that I described a bit earlier, and so, for example, you saw that sort of a key assumption that we made was the relative proportion of the stock that was in the southernmost region for both stocks, and these operating models could be used to evaluate alternatives to those assumptions, and so it could be to assume that the volume is actually lower than we assume in the base case in the Florida region, or it could be higher, but, like I said earlier, this is going to really -- The management actions that are proposed, or are evaluated in the MSE, the spatial management actions, are going to be determined by relative importance of these operating models, and so I think, until we define exactly what spatial management actions we still need to investigate -- Once we've done that, we can refine and determine exactly what the uncertainties -- Which uncertainties in the spatial dynamics we should consider in the alternative operating models.

Our next steps are to finalize the specifications of these uncertainty operating models, and we can always develop more later on, but the key thing here is to include the most important uncertainties, and so any results that we can present -- We can present them for the base case, and we can also evaluate how those results are impacted by what the group identifies as the most important uncertainties.

Okay. Management measures, and so management strategy evaluation is generally focused on identifying robust rules for managing a fishery, and so this is typically called a management procedure, some set of rules that is most likely to result in achieving the management objectives, given the wide range of uncertainties that are included in the analysis, but MSE can be used to inform other aspects of fishery management decision-making as well.

It can answer questions like what complexity of assessment model is appropriate, what data is most important to be used for management, and so what data should be collected, what's an appropriate assessment interval, or a management update interval -- Is it every year, or every two years, or so on? Then what are appropriate management reference points for the stocks? What reference points are most useful, make the most sense, for the particular stock dynamics? There is other things that will be asked as well.

Here, I guess the point I'm trying to make is the thing we need to consider is like what are the most important questions that we wish to ask within this particular MSE, and is it to identify a management -- A particular management strategy, a management procedure, or is it to, given an existing management strategy, determine, for example, the assessment, or the management update interval, and is it to identify which data are most important for management and so on? This becomes quite important to really focus the state of the MSE, the focus of what particular questions, select questions, we wish to ask.

In terms of management measures that can be evaluated, in terms of management procedures, sets of rules that turn data into management advice, we can include an effort control, and so seasonal openings or licenses or boat days, and spatial closures, and so, like I just described, the spatial structure is built into the model, and so we can close areas to fishing, or to fishing for some of the year, for example. Size limits, either a minimum legal length or a slot limit, or catch limits, and so ACLs, changes to gear selectivity, bag limits, release gear, or any combination of those things, and so, again, at this point, we would need to start defining specific management measures that we wish to evaluate. That's part of our next step, is to identify an actual suite of management procedures we wish to evaluate in the next round of the MSE analysis.

I've got here some example results, and these are just for demonstration purposes only, because, as I say, we want to refine and get the operating models, particularly the base case, to a state where everyone can agree that this is our best description of the fishery system, and, also, these are just some example management procedures that we built for this purpose of exploring the results, but all these things could change, and probably will change.

I've got four example management procedures, and these are all about fixed fishing effort, or fixed fishing mortality, in the future projections, and so we have what I call status quo, and that's where the fishing effort for all the fleets in the projections is just fixed at the mean of the last three years, and so imagine it just freezes effort where it is, or the average from the last three years, for the two stocks, and you just keep fishing at that rate going forward, and what would that look like, and how would that compare with other alternatives?

Number two is the same, but with a minimum legal length, and we add a twenty-inch size limit for the red snapper and a twenty-five-inch for the gag grouper. Number three is, again, the same as status quo, and the effort gets frozen. The effort gets frozen at the mean from the last three years,

but the effort from the general recreational fleet is reduced by 20 percent, and these numbers, like the size limit and this 20 percent, are just sort of an example, and I just plucked them out of the air, just to start showing some of these results, and the last one is F target, and this is where the overall effort is modified so that the fishing mortality in each stock is equal to the F target, the target rate, and so the relative effort, the distribution of fishing effort between the fleet, stays the same, but the stock is just fished at the F target.

These are static methods, and these don't change in respond to data, and they're sort of hypothetical, and like what if you could just fix effort, the fishing mortality, at F target, and what if you could just reduce fishing -- You know, general recreational effort by 20 percent, and so these aren't necessarily in fact realistic, in terms of implementing, and they're certainly not dynamic, and they don't change in response to data, but these sorts of approaches can be really useful for scoping out what sort of management changes would be required to meet specific objectives. Again, if you want the stocks to rebuild to a certain point, in a certain time, what would it take to get there? This is often useful as a first-pass, to see whether it's even feasible to be able to achieve certain things that are desired.

I've got a set of plots here, and these all kind of look the same, but the difference will be what's on the Y-axis, and so, here, I'm showing a total fishing mortality rate for these four management procedures of status quo, status quo with a minimum legal length, the status quo where the recreational effort is reduced by 20 percent, and fishing at F target.

The rows show the red snapper and the gag grouper, and the vertical-dashed line shows the break between the historical, and that's on left, and the historical is coming out of the operating model, and the projections going forward, and you can see, for these four management procedures, they're all a fixed fishing mortality, like I said, and so you look, particularly at this F target one, and you can see the fishing mortality in the future is set exactly at this dashed line, which is the target fishing mortality rate, and these other ones -- At status quo, the F is the mean for these last three years, and it's mean over 2017 to 2020.

You will see that like the status quo with the minimum legal length -- Effort is frozen at the same level, but that fishing mortality is a little bit lower, because of the size limit we've put in place, and the same thing here with the status quo, and the effort stays the same for all of the fleets except for the recreational fleet, which was reduced by 20 percent, and so the overall F is lower, and F target -- For F target, we just forced everything to reduce the effort until we fish exactly at the target fishing mortality rate.

This plot shows the same information, and it's the same layout, but, on the Y-axis, we have landings, landings in the blue and discards in the red, and it shows the median in the 25 percent and 75 percent intervals, and so the main thing to compare here isn't so much the absolute value, but how these projected landings and discards change across management approaches, and so, particularly, you can see, if you want to compare status quo, on the left-hand side, with the F target, you can see that, to get -- To get the target fishing mortality rate, it requires quite a drop in catches. If you were able to just suddenly, next year, just fish at the target rate, both the catches would drop down significantly, for the red snapper particularly, and a little less so for the gag grouper, but you can see, at that point, if it was continually fished at that rate, particularly for the gag grouper, you would start to see the catches rebuilding.

Fishing effort would stay the same, but the catches would start to increase over time, whereas, with the red snapper, we don't see that. In almost all the scenarios, the landings, which is only coming from a very short season, are either decreasing or -- Even at F target, they stay pretty flat.

This last plot shows the spawning stock, the spawning biomass, for the red snapper and the gag grouper. Again, it's the -- Here in the horizontal-dashed dotted lines, at the reference points, the MSY, and also the spawning biomass threshold, which is 75 percent of the MSY for the two stocks, you can see the only approach that rebuilds above MSST, or gets either at or close to the MSY, is this F target. The other approaches -- If you fish at status quo, it predicts, for the red snapper, the biomass is actually going to continue its decline, and the size limit shows something similar, and the decline is slightly less, but it's still a decline, and the effort is showing a little bit more stable, but not a rebuilding. The only one that rebuilds is the F target scenario.

For the gag grouper, you can see that, in all the scenarios, the biomass is actually starting to rebuild, but it's just the speed of the rebuilding, and it's actually proportional to the fishing mortality rate, and so, if you reduce the fishing mortality rate more, the stock rebuilds faster, but the status quo predicts that the stock will continue to rebuild, but, within the twenty-year projection period, it might achieve any of the reference points. Adding a size limit in -- Keeping fishing effort the same, and adding a size limit in for the gag grouper, it shows that it does increase rebuild to a higher level, closer to the MSST, but it doesn't quite reach there in the twenty years, but, for example, this sort of result might suggest that we want to explore different size limits, or a staggered approach to size limits, or perhaps a dynamic rule, which uses data to adjust the size limit based on trends in the stock, and so, if it's getting close to a target level, or above that, it might reduce the size limit, or may increase it, if the stock is declining, for example, and there's lots of different things that you can explore with that.

In the last section, I've just got a few challenges that we're still facing, and the first one is to try and model a realistic, or make it more realistic, but multi-fleet fishing dynamics. I think a multi-fleet and multi-stock -- Sorry. Multi-stock fishery like this, a multispecies fishery, the fishing fleets are all going to have spatial targeting and switching behavior, and to try and capture that in an operating model would be quite difficult. In the management procedures that I've showed so far, we essentially hard-coded what the fishing mortality rate would be for each stock, and we could just -- Compared to now, we can either increase or decrease the effort relative to today stays static, but to try and model exactly how the fishing fleets would behave, given the relative abundance of each stock, can be quite challenging.

We need fine-scale fishery data, and so CPUE by species by trip, and I know that a lot of that data is available, but we haven't had the chance really to dive into that and try to build that model. In particular, I think it's because we've only got two species in this operating model so far, but there's many more species in this fishery, and we may need to include more species in the analysis before we're able to build a model and predict how the fishing fleets will behave, or at least expected to behave, given the relative abundance of all the fisheries that are in the -- All the stocks that are in the fishery, and so I don't think it's really possible to do just the two species, because we can't really model the fishing behavior, because there's a whole lot of external factors, and the abundance of other species, which aren't currently included in the model, and so this is something that could do with more attention at some point, but, you know, it might require a fairly specific analysis to try and build what would be a fairly ambitious project, to build a model that can predict how fishing fleets would behave across the entire South Atlantic region.

Other challenges, like I mentioned earlier, is assumptions in the spatial distribution, and this is based on the data that we've had available to us and have been able to process so far, but there's going to always remain some fairly significant uncertainties in those assumptions, and so this could be explored in more detail. Again, like I said earlier, it's going to depend a lot on what management strategies, spatial dynamic strategies, are -- If there aren't spatial management strategies that are included, then it may not be that important to fully capture the uncertainties in the spatial distribution.

The last thing here is probably one of the most important things we want to do, and, if the objective of this is to identify a harvest strategy, or a management strategy for these two stocks, we simply find a range of realistic management options, or feasible management options, and so particularly dynamic models, or dynamic management procedures, that can take data streams and process that data in one way or another to reduce a management recommendation that changes in response to that data, and so this is something we need to focus on in our next steps.

This is to recap sort of all the next steps that I've covered through our talk, and our first thing we need to do is get a consensus in our best case operating model structure, and I spent the first half of this talk going over that, and we need sort of the groups to agree on this is our sort of best description of a base case analysis, or base case understanding, of the fishery dynamics, and then we need to finalize, or specify, the most important uncertainties to consider in additional operating models, and then we need to identify the initial management procedures, or the management strategy that we wish to evaluate in the MSE, and I gave some examples here of sort of the theoretical ones, which can be useful, like I said, for scoping out what would be required to achieve certain thing, and so we can either continue to do that sort of analysis or propose specific management procedures.

Then, once we've got those three pieces complete, we can complete the first round of analysis, which would be more or less the same information that I showed you, which is those plots, and also summaries of performance statistics, but it will be at a place where we all agree on the operating models, and we agree, as a group, on the management procedures we wish to evaluate.

The next thing to do, and I am working on this right now, is to develop an online application to better explore, interactively explore, the MSE results, and so being able to compare the performance against operating models, and we intend to present this, or at least a first pass, of the interactive application to the advisory panel, and to the council, at our next meeting, to give them an opportunity to review and provide sort of the information that we need, particularly for these first three pieces that I talked about.

Then, once we've done that, and we've got review and agreement on that first round of analysis -- Sorry. Once we've got agreement on the pieces that we need, we do our first round of analysis, and we present the results. There will be an opportunity for feedback from all the stakeholders who were involved in this process to refine any of these pieces again, and then we will re-run our analyses and present the final results. That's the plan. I think that's the end of my -- Yes, and that's the end of my talk. I really want to, again, thank you for the opportunity to give this presentation, and I want to thank the MSE technical team, who have been involved in the background on this, for providing input to all the aspects of this process that I've talked about, and so thank you, and I will hand it back to the chair.

DR. CURTIS: Thanks, Adrian. I'm going to take back control, so we can see the hands raised for any questions, and, SSC members, if you could, if you've got a question on a particular slide, just tell me what slide it is, so I can scroll to that in the presentation. Go ahead, Jeff.

DR. BUCKEL: I just wanted to thank Adrian for an excellent talk, and I will let others ask -- I have some questions, but let's see what hands pop-up before I go. All right. No hands, and so could you scroll to the slide that has the distribution, like the nearshore and offshore?

DR. CURTIS: Do you know which slide number that was, Jeff?

DR. BUCKEL: No, and, when you hit it, I will just -- There you go. I know that you have the area that offshore -- It goes really far offshore in 4 and 2, and a little bit of 6, it looks like, where, you know, it's way beyond the shelf break, and both of these species are not going to be beyond that shelf break, and so I don't know if it matters or not, and there was one time when you were talking about how the area impacts the proportions, and so what it looks like to me, if I'm following how far the green and the purple and the orange extend out, it's going -- It looks to be farther -- Way beyond the shelf break, but I could be misinterpreting, and so that's the first question, or comment.

DR. HORDYK: Sure, and I can respond to that, if you would like.

DR. BUCKEL: Great.

DR. HORDYK: So that's really helpful, that comment, because that was sort of one of my uncertainties, and the colored region that you can see here -- The outside of that is what I have grabbed from the South Atlantic Fishery Management Council's management zone, and this is exactly the sort of information that I've been hoping to get, was whether that was realistic to assume that that is the distribution of the stock, to at least the fishing -- Particularly the offshore region, and it sounds like it's not, and so, in which case, the densities that -- The reason that the sizes is important, the relative sizes, is because -- It's just to calculate the density of the stock, and, if this area, the offshore area, is actually much smaller, or closer to the shore, including the whole management area, that would change that calculation.

What would be useful to get, either now or from somebody, would be to say like where the offshore area for these particular fisheries would extend, is more likely to extend to, so we can adjust the relative size of those offshore areas.

DR. BUCKEL: Yes, and that sounds good. I think there are folks on the SSC that could provide that, but, you know, the shelf break, and somewhere, you know, in that -- I don't know, but the hundred-meter depth range, or we can get something more exact from folks that have that information from survey data. I have a couple more questions, and then we'll go to the folks that have their hands raised.

When you have the regions 5 and 6 down there, and you didn't have information for red snapper abundance, and you used a latitudinal prediction from the Gulf of Mexico, I think making that assumption, that the abundance in Area 5 and 6 for red snapper is two-times Areas 3 and 4 is not correct, based on what I have seen from other data in those areas, but certainly folks from Florida

that are on the SSC, or on the call, can weigh-in, but I think the highest -- From my understanding, the highest densities are at that 3 and 4, and then it does -- What you see in those SERFS data, where it starts to tail off below Cape Canaveral, I think that continues into -- You know, throughout 5 and 6, but we'll let others see if they confirm that or not.

For the operating models that you presented, those additional operating models, I thought those were good. For recruitment, it looks like the additional OMs are dealing with the process error, and I wonder if it's worth considering, given that we're seeing lower recruitment, consistently lower recruitment in some of the -- In gag, for example, and if it's worth having like a lower recruitment and a higher recruitment additional operating model.

Then the management procedures that you did were interesting to see. That Management Procedure Number 4, I'm curious -- The one that led to the -- You know, the one that you forced to meet the target, what was the percent effort reduction to get there? The 20 percent reduction in the rec effort didn't get there, and I know -- When you force it to go to the F target, I'm curious what the percent -- If you know, or could get that for us, what the percent effort reduction across the different fleets -- What was needed to get to the F target?

Then the last question I had was the size limits, the Column 2 there, where you increased the size limit for both red snapper and gag, and was there a feedback to the discards for those, and so, in other words, if you increase the size limit, you're going to have more discarded fish, and so is that taken into account in that model?

DR. HORDYK: Sure. Thanks. Those are all really helpful, and I'm just busy making notes. It would be really great to get some -- Either on the call or just some people here who have more information on the first point you made about the relative abundance offshore, to get some -- If you could provide some information, we can continue that discussion over email.

For the additional OMs, I noted your suggestion of having a lower and higher recruitment scenario, and so that's definitely something we can include, and we will include, and the F target one -- I don't have the actual what we did -- If you can go back to that slide that showed the projected Fs, and what I've done here, and so, in the third one, everything stayed the same, except for the recreational fleet is reduced by 20 percent. In the fourth one, the F target, all the fleets were reduced by the same fraction, until we got to the F target, whereas what we could do is some combination of those things, because you will see that, in particular for the discards, it's the general recreational fleet that has the highest fishing mortality on that, and so we can play around with that, for example.

What I've done in this one is if you see the -- Let's have a look at the status quo F, and it's about -- What is it, 0.45, about 0.45, on the status quo on the left, and, on the right, it's almost half of it, by the looks of things, and I haven't got the number in front of me, but you can basically see that -- It's just across all the fleets, is that ratio, and it's just halving F, and so halving effort, and it's getting close to that, but the point I was making earlier is what you could do is explore the -- For particularly red snapper, it's the general recreational effort that is the most significant, and so you could just about keep the other fleets at a higher level and reduce -- You might need to reduce the recreational effort by half, or more or whatever, to get that target.

I guess what I'm trying to say is there is multiple different ways to get to the F target, and some might be more palatable than others, but some might also require larger changes to the relative effort for each fleet than others, and so that's something to be explored.

Then your last question on the discards, yes, it does -- With a size limit, what happens is the size limit is applied in the on-season, when they're allowed to fish, and anything below the size limit is discarded, and subject to discard mortality, but the size limit isn't, obviously, implemented in the off-season, where everything is discarded, and so you see -- That's why, for the red snapper, it's not as effective, because most of the catch, or most of the removals, are actually caught during the time when everything is discarded anyway, and so the size limit doesn't have any impact there, whereas the gag has more of an impact, because there's less, a lower -- Off-season, there's fewer discards, and so it basically increases the discards when you have a size limit, and so whatever the fraction of the discard mortality is, and I forget, and I got it straight from the assessment, and that fraction of the fish below the size limit die, and the rest go back into the population, and so that feedback is there, yes.

DR. BUCKEL: Great. Thanks so much, Adrian. Next up is Marcel.

DR. REICHERT: Thanks. Thanks for the presentation. There's a lot of effort included in this, and it's really cool work. I had two clarifying questions. One is similar to Jeff's, about the nearshore and offshore relative to the area, and also relative to I think it's Slide 31, where you look at the spatial structure and the proportion -- Maybe I misunderstand this proportion of the population, but, anyway, I think the trap survey data on abundance and length, and possibly age, with depth, may be useful in that respect, because that may tell you where you see the declining densities, or abundance, with depth, especially in the further offshore areas, but you already talked a little bit about that when Jeff asked his question.

The other question I had is, if you look at Slide 25, and it's the distribution, did you guys -- I was looking at the red snapper one, and did you guys take that kind of increase in red snapper densities off of North Carolina into account in your calculation of relative population size from north to south?

DR. HORDYK: By that, you mean the high density in the most northern part of North Carolina that you can see in that --

DR. REICHERT: Yes, and maybe Wally can address that too, but, if I remember correctly, we've always seen somewhat higher densities in that North Carolina area, and then it tapers off a little bit, and it picks up in mid-South Carolina and south.

DR. HORDYK: We haven't accounted for that, because, in here, we have just our spatial area is basically from South Carolina -- It includes the whole of South and North Carolina, and it's all one area, and we calculate -- From this plot you see here, the SERFS plot, it's just essentially the relative distribution of red snapper in the North and South Carolina versus that below that.

DR. REICHERT: Okay.

DR. HORDYK: But that's something that could be considered, but then we need a finer-scale spatial model that includes those smaller areas, and, for your other point, I made a note on that trap

survey, and that's why -- I haven't explored that yet, and so that would be something to look into for just using the depth, and so thank you for that.

DR. REICHERT: Okay. Thank you. I appreciate it.

DR. BUCKEL: Thanks, Marcel. Alexei.

DR. SHAROV: Thank you for a really very interesting presentation. A couple of questions, and one is on the -- What is your approach to further investigation of the uncertainties, and is it just simply sort of uninformed exploration, or just, you know, applying a range for certain parameters, and so like, for example, low natural morality, high natural mortality, which often have a limited value, because, in the end, you end up with a wide range of possible sizes of spawning stock biomass, or fishing mortality rates, whatever other parameters you're looking at, and, you know, just having a very, very wide sort of envelope around the trend of your SSB, for example, or whatever else, is not very informative, and so I'm not asking for necessarily like a true Bayesian approach, but is there anything beyond just looking at the range? That's one.

The second is, of course, the most interesting would be that the exploration of the management measures, you know, where you would see how the stock is likely to respond to those, and a significant proportion of the management strategy evaluation process, as far as I understand it, is based on actually interaction with the stakeholders, and so, normally, you come back to the stakeholders and say, well, here it is, and here is the model, here's how it works, and what are the options, management options, that you would like to explore, and so that's what you were listing in your upcoming steps, doing the -- Exploring various management scenarios, but it looks like the stakeholders are not involved at this stage, and is that correct?

DR. HORDYK: Thank you. I will respond to that first point first and then talk about the stakeholder engagement. For the range of uncertainties, there's lots of different -- Like you said, there's lots of different ways that we can do it, and it depends on the group, how they do it, and the reason why I quite like this approach of just having, at least initially, in a first pass, these sort of alternatives is because, in this case, we're not necessarily interested in the absolute predictions of spawning stock biomass, or catches, or anything like that, but we're just interested about -- For example, if we said -- If we wanted to put a size limit in for red snapper of twenty inches or whatever, and, if we wanted to do that, would the relative performance of that approach change significantly if the natural mortality was actually lower, or higher, because you remember, if we change natural mortality, right, then all the reference points will change as well.

It might show, for example, that, although the approaches -- Let's just say we're just simply exploring size limits, different size limits, you know, twenty inch, twenty-two inch, twenty-four inch, so on, and we might find that, under the base case analysis, the twenty-four inches gives us the best tradeoff in the objectives, and then the question becomes, well, if natural mortality was actually lower, would that twenty-four inches still be the best size limit, and this is a very simple example, but the same concept applies to any management procedure.

If the answer is no -- Sorry. If the answer is yes, that it would still give you the best tradeoffs, then that natural mortality isn't a key uncertainty for this particular management approach, and that would mean you don't necessarily need to explore it any further, but, if it turns out that it's quite significant, then, like you said, you might want to explore more sort of sophisticated uncertainties,

and so it's the interaction between the uncertainty and the type of management approach that you wish to consider and whether it's important or not, because some uncertainties are much more important for certain management approaches than others.

This is why I like to do such a thing as a first-pass, but certainly, like you said, there's other ways, sort of more sophisticated ways, to explore these uncertainties, and any feedback, any suggestions, that are provided on that, we can incorporate.

The stakeholder engagement for the management measures, what we've done so far is we're using the advisory panel primarily as the group to -- They've been the ones who have been involved in the whole process of constructing these operating models, like all the stuff we've seen so far to define the areas and so on, and we've talked quite a bit about management procedures with them, but it's often -- Or management strategies, but it's often quite difficult for groups of stakeholders to sort of provide concrete, specific requests until they've got to this point now, where they can sort of see the whole thing in action.

We had one round of that, and I think it was in October of last year, and we presented something similar to the results I'm showing here, and, from that, it gave us a whole lot of suggestions on alternative models, which will be included, most of them, and some of them I've shown you today. We've also had -- As part of that process, we had a -- The council organized a public scoping meeting, where the public could call in and provide their feedback and thoughts, but, so far, we haven't had a lot from them, particularly from the public, on management strategies, or different management approaches, and so we're hoping -- There's been opportunities for that, and there will be more in the future, but it's primarily through the advisory panel that we're doing this.

DR. BUCKEL: Thanks, Adrian. Wally is up next.

DR. BUBLEY: Thank you. I had a lot of the same questions that Jeff and Marcel had about the size of the offshore areas and being a little inflated there compared to the area they're using, and so that's been covered, and the red snapper as well going south of Cape Canaveral and continuing to increase distribution, or density, because what we've seen in some other surveys, including one that is a relatively recent deepwater longline survey, but still covering habitat that red snapper are in, and, from what we've seen from preliminary data, it's that, from about the area where the SERFS survey ends, there's very little catches, up until you get to way west of the Florida Keys, over by like the Dry Tortugas and Key West, and that's where the red snapper fishery actually starts to -- We actually start to catch fish again, and so it's just reiterating the points that they've already made, and so I won't get into those too much.

I did have a couple of questions regarding gag, and so one of them was, just because gag are relatively unique in terms of recruitment for reef fish species around here, in that they're spending their first life in the estuaries, prior to moving offshore as they get bigger, and so it seems that the offshore abundance, and especially those early life stages, shouldn't be anywhere near what the onshore area is, regardless of density, because it seems odd, to me, that they would be coming from the estuaries and immediately traversing through the nearshore areas and going to the offshore areas, and so it seems much less likely to have fish in that offshore area until they get to a larger size, and so that was one concern that I had, based on some of the findings that -- Or some of what you put in the model.

Then the other issue with gag that I had, potentially, is that in the -- I tried to look this up in the last assessment, and it looks like the 2020 recruitment wasn't based off of any actual data, and it was based off of the long-term average for recruitment, and so I just wonder how much that's going to affect things with having 2019, which was a relatively good year, and then 2020, following that up with a good year as well, where that might not have actually been the case, and I was kind of curious to see if that would have an effect moving forward with it as well.

DR. BUCKEL: Thanks, Wally. Did you want us to scroll to that slide for the gag recruitment?

DR. BUBLEY: I mean, you can. It just seems -- Again, in the offshore area, the fact that gag recruitment -- You see the probability of even the age-zero fish are way higher than anywhere other than the nearshore, and it doesn't seem like it makes a lot of sense to me, biologically.

DR. BUCKEL: Go ahead, Adrian.

DR. HORDYK: I think that's really useful, and so the big thing here is the fact that -- Like, if you look at the North and South Carolina, at the offshore, the recruits is quite high, which is, as we've discussed, is too large, but the offshore area is like 50 percent of the -- The way it's calculated right now, it's 50 percent of the entire area, and so the actual density in there is going to be really low, but, because it's so -- The area is so large, and, the way it's set up right now, and it needs to be changed, but it says that there must be -- To get there, and you have that really low density, and such a large area, and you must have a huge number of recruits, if that makes sense. The fact that the area is going to shrink, then the proportion is going to change completely.

DR. BUBLEY: Right, and I understand that aspect of it. It just seems that even age-zero, or age-one, fish, and I just find it very difficult that basically any of them would go to the offshore area right off the bat, and I can't imagine there's a direct migration, that they just decide they're out of the estuaries and they're going to run for, I don't know, forty miles, until they find a spot where they like. It just seems that, at those very early ages, that it's less likely to have -- It's going to be very low, if any, density of gag out at those offshore areas.

DR. HORDYK: Okay. I understand your point there, and so, basically, the proportion in the offshore area at a young age should be close to zero, is what you're saying.

DR. BUBLEY: Right, because, I mean -- We can look at that with some of the SERFS data that you have at-hand as well, because, by the time those gag are leaving the estuaries, they would go -- They're of a size that the traps would retain them, if they're interested in going towards the bait, and so we would most likely see them, and I would be willing to venture, not having looked at the data, that outside of a hundred meters -- Outside of a hundred feet, there's very, very, very few small gag that is even remotely close to that size that would be at age-zero, one, or maybe even two.

DR. HORDYK: That's a good point, and I haven't had a chance to explore the SERFS data in-depth yet, and so we'll do that. The other thing is I've been noting down the comments about the relatively density of the snapper in the southernmost region, and it sounds like what we've done here is overinflated it, which is really useful feedback, but the question I've got is -- The challenge, I guess, is, when we look at like the SERFS survey now, is the lack of snapper in -- Not lack of, but sort of the lower abundance of snapper in say the Florida region that you find in the surveys,

is that due to fishing, like higher exploitation over the years, or does that reflect the unfished distribution, which is what we're trying to get at here, if that makes sense, and so that's where I don't know, and I'm not saying one way or another, but that's where it would be useful to hear your input on that aspect.

Like what we're trying to get at is something that is the distribution before fishing, because, in the model, we're going to start fishing them, and the fishing is going to start targeting areas of higher densities first, and so they kind of fish them down, but do you have any thoughts on that?

DR. BUBLEY: I mean, I'm not going to speak to it in that sense, since I'm not in Florida, and I haven't been around for that long, but I think there's plenty of resources. I mean, I can think of a couple of fishermen that regularly work with the council who have a lot of experience as charter or headboat fishermen in the Florida area, and, from my understanding, the center of the red snapper distribution has -- As far as I'm aware, it's always been that area from north of Cape Canaveral, or around Cape Canaveral, to the Florida/Georgia border.

DR. HORDYK: Okay. That's helpful, and at least what we can do then is do something similar to what we've done here, and like with the assumption for the south, but under the assumption, or the knowledge, that the center of the fishery is, like you said, in that Georgia to Cape Canaveral region, which will change everything, and so that's exactly the sort of feedback that I was hoping to get.

What are your thoughts, and we can limit it to this gag, where I just essentially assumed that it's half of the -- So the abundance of the gag is half in the southernmost region, and do you have any reactions to that?

DR. BUBLEY: I mean, that seems more realistic to me, but still I don't know if I'm the proper person to be talking about that completely, but that seems more realistic than the red snapper in 5 and 6, but I'm sure there's other people that can speak more to the center of distribution for gag, in terms of the fishery, than I could.

DR. BUCKEL: Thanks, Wally, and thanks, Adrian. We're going to go to Kyle Shertzer and then Chris.

DR. SHERTZER: Thanks. As far as the red snapper in that southern region, they are rare now, and, of course, we don't know what the virgin spatial distribution was, but, if we look at the fishery-dependent data, and I'm thinking of commercial, headboat, and MRIP, there doesn't appear to be much change in that over the timeframe that we have those data, and so they don't go back to a virgin stock, but they also don't show, over the time periods that they exist, a decline, and they've been rare in those data sources throughout, and so maybe that's a little bit helpful in what you're trying to get at.

As far as the depth distributions, I collaborated with Jie, who is on the call, to -- Where Jie has applied VAST to the SERFS data, to get relative abundance over sort of a fine-scale spatial grid, and I've taken that and applied NOAA bathymetry information to get the depth distributions, and so, if that would be helpful to you, we can talk offline about getting depth distributions for gag and red snapper, and it could even be by the areas that you're using in your model, if that would be helpful.

DR. HORDYK: Yes, that would be very helpful, and I will follow this up in an email with you, if you're okay with that, and we can discuss it further, because that would be great.

DR. SHERTZER: Okay. Sounds good.

DR. BUCKEL: Thanks, Kyle. That's a big help. Chris.

DR. DUMAS: Hi, folks. Thanks, Adrian. That was a great presentation, and this is a really interesting model. First of all, I wanted to applaud you at looking at the correlation in recruitment across red snapper and gag and including that in the model. As folks from the committee know, I'm a big fan of looking at correlations to help improve precision and reduce, or shrink, confidence intervals and things like that, where possible.

Also, I'm glad to see that you included autocorrelation in the recruitment series within species, and one question that I wanted to ask was did you also -- Are you also including recruitment correlation across spatial areas, and spatial correlation, within species? If not, that might be useful.

Then, in a similar track, looking at fishing effort in the model, and looking at allowing for correlation in effort across species, and correlation in effort across spatial areas, and autocorrelation in effort over time within species, and within spatial areas, and so you may have those already incorporated in the model, and I'm not sure, but those would be great to have, to the extent that these, you know, correlations are present. Thank you.

DR. HORDYK: Thanks for that, Chris. Your question on recruitment across spatial areas, no, we don't have that currently. What we have available to us is the recruitment estimated, or the deviations in recruitment estimated, from the assessments, which are for the whole region, and so that's what we'll be using, and we apply like a global population through the entire region, and so recruitment is across all those regions.

The only difference is the recruits are allocated each area, and the deviation is the same for all the areas, but they are allocated according to that plot you can see on the left, and so the recruits kind of go to the nearshore and so on, distributed across the three regions, but we don't have different recruitment variation by area. We could include that, if that information was valuable, either from the past from the assessment or, if there were some kind of proposed scenarios, and, like I said, we could include it, but it's not currently.

Similar to your question on the effort, at the moment, no, we don't have any of that built into the model, like a predictive model for the fleet dynamics, and it could be fairly straightforward to include the autocorrelation in the fleet, within fleets and stocks, but the challenge, like I sort of said at the end there -- The challenge is I did a whole bunch of work trying to explore that with the distribution of effort, of fishing effort, by fleet across these two stocks, but I found there was really no predictable pattern at all, and who really knows if we could even find one, but probably one of the reasons, I thought, was because I'm just trying to determine how these fishing fleets allocate their effort across these two stocks, when, in reality, they take into account many more stocks, which I don't have included in this model so far.

We could certainly include something, like I said, from the autocorrelation within stocks, but I don't have any sort of more sophisticated stuff, where I can model exactly how the fishing fleets distribute with respect to all the stocks that are available to them.

DR. DUMAS: Thanks.

DR. BUCKEL: Thanks, Chris. Any other hands? Chip, are you monitoring hands?

DR. COLLIER: Yes, and Steve Turner has his hand raised.

DR. BUCKEL: Go ahead, Steve.

DR. TURNER: I'm going to take a step back and ask a question about basically the info on Slide 43, where you say the complexity of the assessment model, and so I'm new to the SSC, but I'm concerned that we're basically fitting to a catch that is highly uncertain, when we may have indices of abundance that are far more certain, and we're forcing the fit to the catch to be exact, or tight, and I'm wondering about relaxing that assumption and putting more emphasis on some indices of abundance, and this may -- The people with more experience in the South Atlantic than I, with South Atlantic assessments, may say that this question is better for a stock such as black sea bass, or vermilion or something, where we have indices that are quite tight, but I'm really wondering about whether it's sensible to move to a different structure in the models, the assessment models, because of this huge amount of uncertainty in this one set of parameters, or one set of inputs, that we're fitting so tightly to, and is this -- Is the MSE approach a way to begin to investigate that, or should we be looking in other areas to begin to look at that? Thank you.

DR. HORDYK: Thanks, Steve. There's two aspects of that. In this slide, this question here of what complexity of assessment model is appropriate, in this particular context, it's talking about, if we were to use the assessment model as part of the management decision-making process going forward, which may be the case, and what complexity of the assessment model would be required, in the sense of do you need a full-blown stock assessment every year, or every two years, to set management advice, or could you do something that's going to get the same, or better, results with a much simpler process, like an index targeting approach for example, which is -- You can answer that question with an MSE, and you often find that simpler approaches can get the same, or a similar, performance as a more complex assessment.

The question you're asking is more about the uncertainties in the operating models and about whether the assessment model, like we're currently using to generate the operating model -- As I said, the operating model right now, the base case, comes directly from the assessments, and whether we should consider structural changes in those assessments, which is certainly a legitimate question, and, if that was something you wish to explore, the MSE can explore that by rerunning the model with different structure, or different assumptions, by freeing up the requirement to fit exactly to the catches for example, and that could be something that could be done, but the MSE really is only focused on exploring that uncertainty with respect to the performance, the relative performance, of different management approaches in a projection going forward, and so compare whether that uncertainty has a big impact on management performance.

There's another aspect to it, which whether changing the model structure would give you better estimates of the stock status, or the output of an assessment, and that's kind of a different question,

and certainly the MSE framework, the stuff that's under the hood, can be used to evaluate that question, but that's really about a question of is the current assessment model likely to give us reliable estimates of stock status, or are there alternative structures that might give better results, and that's a question that we're not currently focusing on, but you certainly could use this sort of framework to answer that question, and so hopefully that's helpful.

DR. TURNER: Thank you.

DR. BUCKEL: Thanks, Steve. Other questions for Adrian? Okay. Seeing no hands, we'll move to the agenda action item, and, Adrian, while we're working on these -- I don't know if you were planning to drop off, or if you want to hang out and listen to this, and there may be some other questions for you, or you might be able to provide some insight, and so it would be great if you could hang out for a little bit more, but, if you have to go, we understand.

DR. HORDYK: No, and I'm happy to hang out. If I could be useful, I will hang out. Sure.

DR. BUCKEL: All right. Judd has got our action item up, and so we've hit on several topics, and, Judd, I will try to look at my notes, and others can chime-in, but we had the reducing the offshore extent of those offshore areas, and I'm trying to remember, and, Wally, was it your data that was -- Somebody, and maybe it was Kyle, had mentioned Jie's modeling for guidance on that. Maybe that was specific to red snapper, and I don't know if it was gag as well, and so, Kyle, did you want to speak up to that point?

DR. SHERTZER: It's both species.

DR. BUCKEL: Thanks. Marcel.

DR. REICHERT: I mentioned the SERFS data may provide some information about abundance and length and age at-depth, which may be helpful.

DR. BUCKEL: Thanks. Then the next issue with the spatial structure was the assumption that he abundance in Areas 5 and 6 is two-times that of 3 and 4, and that assumption is not correct. It does -- The Areas 5 and 6 have lower -- The red snapper are more rare in those areas. Wally, you mentioned some longline data, and I also know that Will Patterson, as you know, is part of the red snapper abundance estimation for the South Atlantic, and he did random ROVs from North Carolina all the way to the Keys, and so that's an additional set of data that could inform that.

DR. CURTIS: Sorry about that, Jeff. Can you say that again?

DR. BUCKEL: Will Patterson and the University of Florida's ROV data from the red snapper abundance estimation. I think that was it for the spatial structure, and others chime-in if we missed something. Steve.

DR. TURNER: The first bullet under spatial structure, my guess is that they just don't have a very good figure there, and so I would say confirm that the offshore areas are limited to the edge of the continental shelf, and, if necessary, reduce the area, if it extends way past the edge of the continental shelf, something like that.

DR. BUCKEL: Thanks. Currently, Adrian had mentioned that he used the management area from the South Atlantic Council's webpage, which goes out to 200 miles offshore, and so --

DR. TURNER: Okay.

DR. BUCKEL: We definitely want to bring it back to the edge of the continental shelf.

DR. TURNER: Yes, and they also had the Bahamas in there, and I doubt that, you know, that's sensible.

DR. BUCKEL: Thanks, Steve. Wally.

DR. BUBLEY: I would also mention the gag recruitment spatially, in terms of the inshore and offshore, for the first at least couple of year classes, where there may not -- That may not be accounted for correctly.

DR. BUCKEL: Thanks, Wally. Agreed. Maybe another area were these additional operating models, and I mentioned one of low recruitment and a high recruitment, and I don't know if other SSC members agree with that. If you have arguments against it, that's fine, and we could take it out, but we've been dealing with that with our projections, and so I thought that might be interesting to see, and I have a feeling we know how it will impact them, but -- Then there was the -- Steve, you mentioned the high weights that are put in catch in the model fitting, and do you want to see that as an -- Adrian explained having it as an additional operating model, and we would be able to see the sensitivity, and is that something you would like to see done as an additional operating model? It doesn't necessarily get at what exactly you were asking, but it would -- We would be able to see how sensitive the management scenarios would be to that, if I followed Adrian's explanation.

DR. TURNER: I don't know if -- I mean, if there's a way to really investigate that, but I think the bottom line is there's other areas where that should be investigated, but, if there's some way to investigate that here, that other people on the committee believe that it is a useful thing to investigate, and that's my primary area of concern, and probably everybody -- A lot of people's area of primary concern, but, you know, whether it really fits into the management strategy context, I'm not sure, and so I need guidance from other people on that.

DR. BUCKEL: Thanks, Steve. Me too. If others want to chime-in, that would be great.

DR. HORDYK: Can I say something here?

DR. BUCKEL: Yes.

DR. HORDYK: I think, in terms of what we're doing here with the MSE at least, we might find, for example, we could include that as an uncertainty, by a different structure of the model, a specific structure where you don't fit exactly to the catches, like you're saying, and we might find, under the -- We could find, for example, that that doesn't have an impact on the particular management strategies being proposed going forward, for example a size limit or whatever, and it may not impact the relative abundance of that, in which case, within the MSE, we say that's not an important uncertainty, but that doesn't answer the question about when you use an assessment

to get estimates of stock status and absolute abundance and all sorts of other things that are important for the assessment output, and it doesn't answer that question at all of whether that uncertainty is important for that context, which is possibly more to Steve's concern, and I'm not sure, but the question of is that an important uncertainty, you can see that when you're trying to get assessment outputs, and so I just wanted to make the point that they're two different things.

The MSE could answer the question saying it's not important in this context, but it doesn't say anything about the context about how reliable each alternative model is to estimating stock status and other things that would be important to the assessment.

DR. BUCKEL: Thanks, Adrian. Yes, that's helpful. I think, given the amount that you have to do here, that we can take -- Unless folks feel strongly about having it on there as an additional operating model, we can take that out here, because, as you mentioned, and Steve mentioned, his question may be more for simulated data, to see model performance for stock status, and so that's a separate analysis.

DR. TURNER: I agree.

DR. BUCKEL: All right. Chris had the autocorrelation in landings, or correlation in landings, and autocorrelation, and, Chris, I'm not sure if that was under an operating model, and, Chris, I see your hand raised, and so go ahead.

DR. DUMAS: I would put that under a different heading, and not under operating models, that issue, the correlation issue, and I will say that it was not correlation in landings, and it was correlation in effort, but I did have a possible operating model to include under the operating models section, and that is a scenario where retention would be required, so there are no discards, and then effort would be reduced until total removals were the same, as some sort of baseline scenario.

DR. BUCKEL: Adrian, would that be a management strategy?

DR. HORDYK: That's right, and that would be a really useful one to have under management strategies there.

DR. DUMAS: A different category? Okay. Thank you.

DR. BUCKEL: I like that one, Chris. Thank you. Others, for any of these bullets, or to add a new bullet, and so we've got spatial structure, additional operating models, additional management strategies, and do we have other comments on the approach? Alexei, I've got your comment, and, you know, I have a note about getting management scenarios from stakeholders, and it sounds like, Adrian, that's what you will be doing with the AP and the council, and so we can just say that we applaud that effort to get those management scenarios from stakeholders. Jim, go ahead.

MR. GARTLAND: Thank you very much. Just thinking about the proportions of the stock that you have, and those six effectively strata, right, they're based on some recent data, and, again, relative to the Southeast, could we test the sensitivity of the operating model basically to different assumptions about what the virgin population would look like, right, and so we're dealing with decades and decades of both fishing and the environment kind of moving out from under us, and

would it be possible to see how -- I don't know, but I guess how robust the model is to some proportional adjustments in those proportions, just to get an idea of how sensitive it is?

DR. BUCKEL: I will let Adrian tackle that one.

DR. HORDYK: The question is can we do that, and, yes, certainly, and so I think the first thing we need to do is just refine what our base case assumption is, and I think part of that conversation -- What would be useful is I've got Kyle's email already, and it would be useful to have anybody who wishes to be involved in that discussion to contact me, because what we would like to get is the base case assumption, both in terms of the sizes of the regions, and also the distribution, and then exactly this, what the alternative scenarios could look like, what those numbers would be, but certainly we should include that, and so thanks.

MR. GARTLAND: Thank you.

DR. BUCKEL: Thanks, Jim. Marcel.

DR. REICHERT: I have a -- Under gag recruitment, perhaps a clarification, or why that may be important, and so my recommendation, or suggestion, is to add "given the estuarine early life history component of gag", because -- Wally, correct if I'm wrong, but that was kind of the core of your comment, correct?

DR. BUBLEY: Correct, yes, and it's basically coming from a direction, and it's not just evenly likely to be inshore or offshore, and it's because they're coming from an area that's inshore of the inshore area, that they're more likely to be in that inshore and not the offshore. Thank you.

DR. REICHERT: Thanks.

DR. BUCKEL: Thanks for the extra detail there, Marcel. Others? Fred Scharf.

DR. SCHARF: Jeff, just related to the additional operating models for low and high recruitment, I wonder if Adrian could speak to -- You know, would those scenarios be -- Would they be captured under what you described in, you know, the recruitment process error projections? You know, I was just thinking about the projections that you showed, and you showed the slide that had these nine simulations, and I wondered -- Were those based on the empirical patterns that you had above, and is there a case where an operating model, or an alternate operating model, where those could be -- Patterns in recruitment for projections could by hypothesis driven, you know, sort of like whether a regime change had occurred, or whether, you know, a distributional shift had occurred, or something like that.

DR. HORDYK: One of the plots that I showed you was the base case operating model, where the recruitment patterns in the future were based on what was observed, or estimated, in the assessment, and so then I just -- I didn't show you, but I just talked about what I had listed down as an alternative operating model, where we just increased the variability, and so more extreme values, and the same sort of pattern, but more extreme in the projections, but then a suggestion, that came through the discussion, was to have these lower and higher recruitment scenarios, which we certainly can, and should, include, but there's different ways of doing that, and so it would be

useful to have, at some point, some sort of more specific feedback on how we should implement that.

There is, like you said, where you can have regime shifts, like short-term regime shifts, where you have a period of X years where it's lower than average, and then followed by a period where it's higher than average, for example, which means that the mean recruitment over the entire time doesn't change, or you can have scenarios where the actual mean average recruitment changes, decreases or increases, but that can also introduce a lot of complications, in terms of reference points, because the reference points essentially are calculated from the mean recruitment, and so, if the mean recruitment changes, then it's a question of do you adjust your reference points accordingly, or do you keep them the same, and so we can unpack -- We can do lots of different things with exploring those recruitment scenarios, but we may need to unpack it a little bit more, to be able to work out exactly specifically what we should include.

DR. SCHARF: Great. Thank you.

DR. BUCKEL: Thanks, Fred. Adrian, we can help with some of that, you know, the potential low and high recruitment, and maybe the stock assessment -- I know that's where you got the low and high M, and so maybe the stock assessment is the place to look first, and I think there were scenarios there for that, as I recall, but, if not, we can certainly provide some guidance. Other comments on the response or further guidance to Adrian?

One thing that we talked about -- I had a comment, and you had a good idea, Adrian, is your current Management Procedure Number 4, where you reduced the F to the F target, and I had asked about, you know, what percent effort reduction was required, and you had mentioned that you had reduced the effort on all fleets, but that you might explore, like for red snapper for example, just reducing the recreational discards, for example, and so I think that would be helpful for, you know, the situation that we're in, and so it sounds like you had taken a note on that, but we can add that here too, and, if I botched what you were suggesting, please fix the text there. Judd, maybe just add that for Management Procedure Number 4. Is that clear enough, Adrian, if you look back at these?

DR. HORDYK: Yes, that's -- It is, yes. That captures what I said too, and so --

DR. BUCKEL: Great. Any others? I was trying to take notes as folks were -- If you brought up something that you want Adrian to look into, but I didn't bring up, then please -- It wasn't because I didn't like your idea, but I just didn't have a chance to write it down, and so chime-in now if your comments aren't here in the response.

DR. CURTIS: Certainly you will have a chance to review the report, and make any additional comments and edits and recommendations, and we'll be sure to pass those along to Adrian, so he can refine these models.

DR. BUCKEL: Yes. Good point, Judd. All right. If there is no hands, that was the one agenda item, or action item, for this, right, Judd?

DR. CURTIS: Yes, and thank you to the SSC for some good feedback, and thank you, Adrian, for a great presentation.

DR. BUCKEL: Thanks so much, Adrian. We'll let you get back to your day out west.

DR. HORDYK: Great. Thank you, all. Thanks for the opportunity, and thanks so much for this really helpful feedback, and so I will sign-off here.

DR. BUCKEL: All right. Take care, and we look forward to working with you in the future. All right, Judd, and so we're back to SEDAR and terms of reference for red snapper, and is that right?

DR. CURTIS: That's right, Jeff, and we could take just a quick biological break, and so we can just change gears.

DR. BUCKEL: I think that's a great idea. We'll be back at 3:05, and will that give you enough time?

DR. CURTIS: That sounds good.

DR. BUCKEL: All right. We'll see everybody back at five after three. Thanks, everyone.

(Whereupon, a recess was taken.)

DR. BUCKEL: Judd, how are you doing? Are you ready for us to start back?

DR. CURTIS: I think we're ready to go. I'm hoping that Kyle is back. He was going to talk a little bit to the assessment type discussion.

DR. BUCKEL: Great.

DR. CURTIS: Kyle, are you back with us yet? He may not be back yet, Jeff. He had to take a quick -- He had to leave for a minute, and so, if it's all right, can we move on to some of the Other Business items then, until he's back online?

DR. BUCKEL: Yes, great idea. We're still seeing your break slide.

DR. CURTIS: Yes, and I will bring us back live. Okay. First up on Other Business, and we'll tackle some of these right now, and Chip Collier is going to talk a little bit about the discussion of the tilefish and blueline tilefish assessment processes. Chip, if you're ready, go ahead.

## DISCUSSION OF TILEFISH/BLUELINE TILEFISH ASSESSMENT PROCESS

DR. COLLIER: I just wanted to update the SSC on -- Or follow-up with discussions that the SSC had at their last meeting with concerns about moving forward with the blueline tilefish and the golden tilefish stock assessments. Right now, we're still working with the Science Center, doing some data exploration to see what data is available, and we are continuing to progress with these stock assessments until we get that final report.

We're going to be talking about it at the council meeting as well in March, and so we'll come back to you all in April, just to let you know where we are in the process, but, right now, the topical working group for golden tilefish, or tilefish, is ongoing, and they are working through some of the past research recommendations from stock assessments, and it was requested to go through as part of the topical working group, and so some work is still ongoing, or is going on, and, no matter what, we'll still have that information for a future stock assessment, if it is delayed we get the SADL information, or five years of SADL, and that's it, unless there is questions.

DR. BUCKEL: Any questions for Chip regarding tilefish and the working group? Well, thanks, to you and the working group members, for the work on that. We appreciate it.

## SEDAR TERMS OF REFERENCE, SCHEDULES, AND PARTICIPANTS FOR RED SNAPPER

DR. CURTIS: Jeff, I see that Kyle is back with us, and so we can move back up to the SEDAR terms of reference, schedules, and participants. I will just kick us off here, and so, in the overview, you will see that we tackled yellowtail snapper already this morning, and so that's great, and next up is red snapper, and, before we start getting into the terms of reference and the schedule and selecting participants for the different data workshop, assessment workshop, and review workshop, I want to have a discussion, and get some input and feedback from the SSC, on which assessment type, either a research track, which the red snapper assessment is currently tabbed for, or a benchmark assessment would be most appropriate, considering both management advice needs as well as the scientific and modeling needs. Kyle is going to be the analyst running the red snapper assessment, and he's online from the center, and, Kyle, if you're ready to discuss some of the concerns and the discussions that you've had at the Center, please go ahead.

DR. SHERTZER: Thanks. I don't know if these are concerns, actually, and, I mean, as far as research track or benchmark, I don't think it matters so much from my perspective, and there will be some new data sources to be reviewed for this assessment, and some new methodology that will need to be reviewed for this assessment.

Data sources that I'm aware of right now are maybe some new citizen science data that brings in a historical catch per unit effort, and the State of Florida has been working on a fishery-independent handline index, and the big one is the South Atlantic Red Snapper Research Program that's been ongoing for the last few years, and we should have estimates of absolute abundance from that study, both from the abundance modeling that is being led by the NC State group as well as the close-kin-mark-recapture data that's also a big part of this project.

We have never, in the South Atlantic, tried to use CKMR data integrated into the stock assessment, and so that's methodology that we are working on now, as part of our research, and so that will need to be reviewed, but, as far as research track or benchmark, I don't see why it would matter. I mean, it would be reviewed in either case.

DR. BUCKEL: Kyle, I have a question on the -- If it is a benchmark, my understanding is that -- You, or the SEDAR staff, can correct me if I'm wrong, and, if it's a benchmark, then we're on a set schedule, and I guess it's not as flexible as a research track, and that's fine, but it's just -- I guess, if we had a -- If there's an issue with the abundance estimates, or integrating close-kin-

mark-recapture, and it's just not possible to do -- Since it's a benchmark, we would have to continue moving forward, and we would just move forward without that, and is that the way you're thinking?

DR. SHERTZER: That's a -- I'm glad that you brought that up, and we probably do need the flexibility in the timing, and so, if it were a benchmark, I would hope that it wouldn't be too rigid with deadlines, you know, to treat it -- In that regard, we could treat the benchmark more like a research track, but the main difference would be that, when we finally did go to the CIE for review, that the benchmark could provide management advice, rather than doing the research track to review the methods and then following up with an operational assessment to provide management advice.

DR. BUCKEL: Yes, and, I mean, I certainly like the idea of having the benchmark, so that we could get the management advice earlier than later. Shannon, go ahead.

DR. CALAY: I wanted to agree with what Kyle just said. I mean, we do think that, if we allow the introduction of a little bit of flexibility into the benchmark process, that it can actually move a little faster than the research track and operational assessment framework, and actually provide management advice, but the caveat that I'm highlighting is that, you know, we would like to discuss how we could ensure that there is some flexibility, you know, if we find that there are terms of reference that are lacking, or if in fact there are terms of reference that can't be met somewhere along the process.

DR. NEER: Jeff, this is Julie, and I can't raise my hand anymore, because I was made a presenter, and can I weigh-in quickly?

DR. BUCKEL: Yes, please. Just chime-in whenever you want, Julie.

DR. NEER: I agree with both Shannon and Kyle. The main difference between a benchmark and a research track, with regard to the outcomes, is that the research track does not produce management advice, and it's required to go on to an operational, to get those final numbers, and, also, it allows for an additional year or two of data to be incorporated during the operational, but, as we've been learning since this process is underway with research and operational, they're not being completed as quickly as we initially envisioned when we discussed this, and so it is postponing information for management quite a bit.

With regard to flexibility, we have always had the capability of pushing back a review, adding extra webinars and such, and that can -- In a benchmark framework, or a research track, if we need more time, we can add more time. With regard to Shannon's comments about the terms of reference, you can always do more than what's specifically listed, if there's something you would like to explore that is not specifically listed, but the analytical team represents it to the panels, and says this would be great if we looked into this, and the panel agrees, and that's fine. Terms of reference that can't be met, all you have to do is try them, and, if there's a reason that it can't be met, you just explain it, and then you've met terms of reference. It's just we can't do it, and here's why.

I think the real question becomes how quickly would the SSC like to see information that can be used for management at the end of this process. If it's a benchmark, you will get it when we're

done, in 2026, or whenever the schedule is. If not, you won't get anything likely until 2027. It is ultimately the council's decision to make that recommendation up to the Science Center with how to proceed, but they are interested in your feedback, as an SSC, and I hope that helps. Thanks.

DR. BUCKEL: Super helpful. Thanks, Julie. Steve and then Kai.

DR. TURNER: It's been addressed. Thank you.

DR. BUCKEL: Thanks, Steve. Kai. Kai, you might be muted. Does Kai have the ability to unmute?

DR. COLLIER: His microphone just went away.

DR. BUCKEL: Kai, if you can hear us, your microphone just went away. Do we have others, while we're waiting on Kai to get his microphone back? Kai, when you get it -- Just keep trying, and chime-in whenever you want. Others have any thoughts on the research track or a benchmark? So far, we've got a good argument for going with a benchmark, to get that earlier management, and the concern about flexibility is not an issue, and so that's great. Marcel.

DR. REICHERT: A quick question, and so if we decide -- Is the current schedule based on a research track, or is that based on a benchmark, or it really doesn't matter, the schedule that was sent to us?

DR. NEER: Marcel, the schedule doesn't really matter, because it still has a data stage, an assessment stage, and a review stage. A few things would be tweaked, such as there would be no ADT if it goes to a benchmark, and so there's a thing that says the ADT determines if methods require an extension of the schedule, and that little row would go away, but, overall, it's the same. The big change that -- You know, with regard to the schedule that you guys see is that, currently, it's set up as a research track, in terms of it says those few things regarding the ADT references, but it's pretty easy to go either way with the current timing. The main thing we would have to think about is what would the terminal year be, and it's set as 2024, which I think is late of a time as could possibly be done, and that's kind of pushing it.

DR. REICHERT: Thanks.

DR. BUCKEL: Thanks, Marcel, and thanks, Julie. Kai, are you with us by microphone?

DR. CURTIS: He is still showing offline. I emailed him to say, if he was having technical difficulties, he could just respond by email, and I would read his comments in, but I haven't heard back from him yet.

DR. BUCKEL: All right. Thank you, Judd. All right. Well, I think -- It sounds like there's been more -- Well, everybody is onboard, that has spoken -- They have been supportive of the benchmark, and, Kyle, you're the analyst, and so, if you're comfortable with that, we are, and we definitely are a fan of having management advice earlier than later. Judd, if you want to capture that, which assessment type is most appropriate. Judd, if you're typing, we're not seeing it on the screen, for whatever reason. There it is. Chip.

DR. CURTIS: Sorry. I forgot to go live.

DR. COLLIER: I am not saying that one process is better than the other, but, since it is currently a research track, we might have to present -- What I'm thinking is we're going to have to present both options to the council, to let them choose, and so we just might have to plan for both of them.

DR. BUCKEL: Okay. Thanks, Chip, and, Judd, I appreciate you having that language, and it's a recommendation, and understanding that the council makes the final call. I don't know if you want to give the reasons that were provided, that the SSC recommends a benchmark-type assessment for red snapper so that management recommendations can occur earlier. Fred Serchuk.

DR. SERCHUK: Is there any difference between a research and a benchmark with respect to what sort of base models you can use? It's been some time since I've been familiar with the exact definitions, but, at one point in time, I thought, in a research track, you could use other methods than the current methods that have been used to do the assessment and that, in a benchmark, you would just use the methodology and update it by more information that was gathered since the last assessment, but I may be wrong.

DR. NEER: Fred, you're a little confused.

DR. SERCHUK: Okay.

DR. NEER: Benchmarks and research tracks can use any model, and everything is essentially up for consideration. Operationals are the one where you're linked to the previous assessment modeling framework with new information.

DR. SERCHUK: Okay. Thank you for clarifying that.

DR. NEER: Yes.

DR. BUCKEL: Thanks, Fred, and thanks, Julie. Fred Scharf.

DR. SCHARF: Just another clarifying question for Julie, and, Julie, if it's a benchmark or a research track, does that dictate whether there are CIE reviewers, or are they part of both, either or, and, also, are they part of the assessment workshop or just the review?

DR. NEER: Both benchmarks and research tracks employ a CIE review. They just come in sort of at different stages. With the research track, they review the initial preliminary modeling framework and stuff, but it doesn't necessarily have full diagnostics, up-to-date data, those sort of things. In a benchmark, the CIEs come in at the end of the whole thing, and we're all done, and this is our best assessment that we can put forward with current terminal year data, full diagnostics and all of that thing, for their review. That is the CIE question, and what was the second question?

DR. SCHARF: Just like on a benchmark, and so I think you just answered it, but the CIE is just part of the review workshop at the end, and not part of the assessment workshop?

DR. NEER: We -- Just as a little bit of history, we, at one point, did try and bring CIE people in earlier in the process, because it is called the Center for Independent Experts, and they're not solely

reviewing. The struggle that we had was that we had independent peer review CIE folks part of the assessment process who made recommendations, and then, when we got to the review panel, the CIEs on the review panel were hesitant to perhaps overturn the recommendations of the CIEs that were part of the assessment process, even though they made recommendations without seeing how it would turn out, and it didn't work well, and so, no, they only come in, within the SEDAR process, at the very end, as reviewers.

DR. SCHARF: Great. Thank you.

DR. BUCKEL: Thanks, Fred, and thanks, Julie. If there are no other hands on this item, we will -- Judd, then we'll move on to the terms of reference for red snapper, and is that where you wanted to go next?

DR. CURTIS: Yes, and so, Julie, I guess a question in this process then. Since these were drafted for the research track, are they all applicable, if it is switched to a benchmark? Do we need to draft a separate terms of reference for a benchmark?

DR. NEER: No. Since it's already built around a process of a data stage, an assessment stage, and a review stage, I think we are, in general, fine.

DR. CURTIS: Okay. I will just scroll down on my screen, so we can keep the hands raised up here, but, if you want to speak to the terms of reference, go ahead.

DR. NEER: Right, and so the terms of reference are supplied for you, and they were put together through working with the Science Center representatives, as well as SSC and staff representatives that were on the planning team who put together these terms of reference for your consideration, and they're based off of a standard template and then modified for each individual species, or assessment, as needed. There was no stock ID component for this -- It was determined that we didn't need a stock ID process for the red snapper South Atlantic assessment, and so that's why these terms of reference start off here with a definition of the assessment unit stock to be considered, and that's just why that is included there. I see a note that Kai is back, and I don't know if he wants to chime-in before I go any farther.

DR. BUCKEL: Sure. Kai, go ahead.

DR. LORENZEN: I, obviously, missed the last big chunk of the discussion, and why don't you finish what you were doing.

DR. BUCKEL: Thanks, Kai.

DR. NEER: All right, and so these are terms of reference that were put together, as I said, by this planning team, and they are built around our normal standard sort of working groups of a life history working group, indices, population indices of abundance working group, statistics working groups for both recreational and commercial, and some discussion of a discard mortality group, social and economic information, and a few other topics, and so I suggest maybe just go through and see if anyone has any comments, starting with life history, which is A.

DR. BUCKEL: All right. Wally, go ahead.

DR. BUBLEY: Thanks. I was looking at the SEDAR 74 Gulf of Mexico red snapper, and talking with some folks over there as well, and they're talking about investigating new technologies for estimating life history parameters, in particular the near-infrared spectrometry and epigenetics, and would we be able to put something like that in here? I know we've been -- Our group has been working on the near-infrared spectrometry recently, and we have a project moving forward, and I had hoped to maybe include that, and maybe if it's just even a sensitivity run that goes along with it, but we were wondering if that could be included in the sort of terms of reference as well.

DR. BUCKEL: Great. Thanks, Wally. Marcel.

DR. REICHERT: Thanks. Julie, you mentioned the bycatch mortality, and is that going to be a separate working group?

DR. NEER: Yes.

DR. REICHERT: In the past, it's been approached in different ways.

DR. NEER: We, the last few years, have settled on doing the discard mortality discussions as an ad hoc working group, so that everyone can participate, as opposed to assigning it to one specific working group, because it crosses many different people, and functions, and so it is its own -- We usually call it an ad hoc group, because it doesn't need a whole meeting week, and it's got a term of reference later down there.

DR. REICHERT: Similar to how that was approached in mutton snapper?

DR. NEER: Yes.

DR. REICHERT: Okay. Thanks. That's great, and, if you allow me, I had a question, like a practical question, about the timing, and should I wait, or do you want me to ask that now, Jeff?

DR. BUCKEL: Go for it.

DR. REICHERT: I saw that the data workshop was April 14 to 18, and isn't that usually when our SSC meeting is, in that same week?

DR. NEER: Well, it's 14 to 18 of 2025, and so I guess the SSC meeting won't be that week in 2025.

DR. BUCKEL: She beat us to that.

DR. CURTIS: Someone got to the calendar before I did.

DR. NEER: Judd and SEDAR can figure that out. We will make sure that it does not overlap.

DR. REICHERT: Okay, because one of the reasons that we kind of preset the week is for the people who are in academics, and teaching, so they can kind of keep that in the back of their minds well ahead, and so that's why I wanted to mention that. Thanks. I appreciate it.

DR. BUCKEL: Thanks, Marcel. All right. Kai, your comment is on the benchmark versus research track, and we'll come back to you, and we'll continue through the terms of reference, but, Kai, did you have something on the terms of reference? Just chime-in.

DR. LORENZEN: Yes, and the two are actually sort of related, and my question was about the South Atlantic Red Snapper Research Program, and, in the schedule, I think the data workshop does not deal with that, and then, half a year later, there's some webinar about the Red Snapper Research Program, and I presume that has something to do with when it may become available, but I'm sort of a little concerned about the sort of two-track approach to, you know, basically not passing that through a data workshop, and I sort of remember that, you know, there was -- There were some issues around that in the Gulf red snapper assessment, and I was wondering if Kyle, or Shannon, want to comment on, you know, how that type of input data will be treated relative to all the other things that will be in the data workshop.

DR. SHERTZER: I can comment on that.

DR. BUCKEL: Go ahead, Kyle.

DR. SHERTZER: Keep in mind that this schedule was developed when it was a research track assessment too, and so, you know, you've identified something that we've gone round-and-round about, and the SARSRP report won't be due until August of 2025, and then that itself goes to CIE review, and so it won't be finalized until after that, which will be later towards the end of 2025, and so that's why there was this extra meeting to discuss those data, and it's more ideal to have a data workshop, where all the data could be discussed, but that would mean waiting until after the research program was completed.

DR. BUCKEL: Kai, do you have any follow-up on that?

DR. LORENZEN: No, and I think it is sort of a little unwieldly, particularly also if there is, you know, conflicting information, and I don't think it's ideal, but I can see where it comes from, and we can maybe talk about that again, if we are revisiting the schedule, and I don't know what you decided, if anything, on the benchmark versus research track. Thanks, Kyle.

DR. SHERTZER: I think some of the original thinking too is that, as a research track, that we might have some preliminary data, at the data workshop, from the research program that could be discussed, but we wouldn't have final data until later, and so this is a research track schedule, and perhaps that should be reevaluated, if this is changed to a benchmark.

DR. BUCKEL: Thanks, Kai and Kyle. Kathleen.

MS. HOWINGTON: Kai, I had a lot of the same concerns, when the council requested that this assessment begin in 2024, and, when I was the previous SEDAR coordinator for this, I was working in conjunction with people that are on the red snapper project, and so, right now, SEDAR staff have, on their to-do list, sometime in July of this year, to have another meeting with the red snapper project team and to make certain that -- And the analysts that are going to be on this assessment, to make certain that everyone is communicating really well from the get-go. We don't want to not have an integration plan in place, and so we're going to have that meeting before the

assessment even starts, or SEDAR is going to have that meeting before the assessment even starts, and then, like Kyle said, we'll have preliminary data available in April, but we'll also have methods.

By then, the methods will have been finalized, and so, during the data workshop, they will be able to talk about that, all of the final methods, and then any data that could be available, and then they will pause there in the assessment process and finalize those conversations with the final data, and so that's the current plan, and, like Julie said before, if, for some reason, there needs to be a few additional webinars, or if something needs to be changed, there is flexibility in the SEDAR schedule for that, but this is the best way that we could accommodate the requested start and end date, as well as the red snapper project end date, and trying to fit all those different puzzle pieces together to make certain that we're all communicating well, and that we all know exactly what's going on, and hopefully it ends up being successful. Fingers crossed.

DR. BUCKEL: Marcel. Thanks, Kathleen.

DR. REICHERT: To that point, and I know that we'll talk about topics in Other Business, but it may be perhaps useful for the SSC to get an update on that project in one of our upcoming meetings, perhaps in October.

DR. CURTIS: Marcel, you're foreshadowing the upcoming agenda items, and we definitely had planned to have an update from the SARSRP project, the red snapper estimation project, either in April, currently, but potentially then also in October, depending on how that has been developing.

DR. REICHERT: Thank you. I think that would be really helpful for us.

DR. BUCKEL: Thanks, Marcel and Judd. Chip.

DR. COLLIER: Our Reef Fish Extension fellow is going to be having a webinar, and I can't remember the date right now, and I will put it in the chat, but the SARSRP is going to be talking at that meeting as well, that webinar, and it's coming up within the next few weeks, and so that will be another opportunity to hear about the project.

DR. BUCKEL: Thanks for reminding folks about that, Chip. I appreciate that. Good questions on the TORs and the timing. Judd, do you want to -- If folks don't have any other questions on the timing here, maybe scroll back up to the --

DR. NEER: We were looking at data.

DR. BUCKEL: Any other additions, or edits, for the life history or population abundance, Item A and B there? If there are no hands, Judd, we can scroll down to --

DR. CURTIS: I'm not seeing any raised hands on this section, Jeff.

DR. BUCKEL: All right. Julie, did you have any specific questions on these?

DR. NEER: No, and, when you get to the next section that Judd has already highlighted, that is one question right there, and so this was a list of potential non-traditional data sources, as it's stated

there, and that initially was, in your draft that you received, just kind of stuck at the bottom of the terms of reference, and it didn't make a lot of sense, because it wasn't directing the group to do anything, and so I think Judd has already made the suggestion here to make it its own sort of bullet here, as H, and say to consider these data sources, and these are some things that haven't historically -- Some of them have, but some of them have not been historically used within the South Atlantic assessments. Some are new, such as the research project and SADL, but the suggestion, from the version you have in your briefing book, was to make this a -- To give this its own bullet under H, to consider these things, if appropriate, and then use them, and so that was just one change that we just wanted to highlight, and then the final thing is make research recommendations and write a report for data.

DR. BUCKEL: Chip.

DR. COLLIER: I can't remember if there was anything on the timing of the terminal year for research track versus benchmark.

DR. NEER: That is listed on the bottom of the schedule, and it currently has listed -- For either case, it said 2024, was what was listed as the terminal year for this assessment. The prior assessment year was 2019, the prior terminal year of the previous assessment, and so 2024 is up for certainly discussion, and, with a data workshop in April of 2025, it might be an ambitious terminal year.

DR. BUCKEL: Yes, and it could be one of those situations where some data won't be available, but others will, right, potentially. Thanks, Chip and Julie, on that. Marcel.

DR. NEER: Final analytic products are due in May of 2025, according to the current schedule.

DR. BUCKEL: Okay. Marcel.

DR. REICHERT: Should we add the Florida SRFS data to that list of --

DR. BUCKEL: I think it's in the first bullet. That's that reef fish survey.

DR. REICHERT: Okay. Sorry. Thanks.

DR. BUCKEL: No problem.

DR. REICHERT: So that should include -- That includes the recreational data for reef fish. Okay. Sorry. I missed that.

DR. BUCKEL: Yes, and I assume that -- Julie, is MARFIN -- There is the other timed handline survey that Kyle had mentioned before, and is that MARFIN, MARFIN-funded, or -- I'm not sure what the MARFIN is.

DR. NEER: They have a couple different drop-line surveys right now, and so I'm not sure exactly what MARFIN is related to, and I think, if you just put "Florida data surveys", that would be appropriate, because they have a few projects going on, and I'm sure we would look at any of them that might be relevant.

DR. BUCKEL: Right. Thanks.

DR. SHERTZER: One is a MARFIN-funded project, which is where that comes from.

DR. BUCKEL: Perfect.

DR. SHERTZER: It's specific to red snapper.

DR. BUCKEL: Thanks, Kyle. Steve Turner.

DR. TURNER: I guess these items in H are all over the place, and some of them are landings, and some of them are indices, and some of them we don't know which, and so I guess it doesn't matter, and I was thinking of putting them in the areas where they belong, but, you know, so long as we understand that people need to pay attention to these in the appropriate areas, then I guess it's okay.

DR. NEER: Steve, that would be another option, is to single them out under the individual working groups, which is something we could do as well, if the SSC thinks that's a better way to go.

DR. BUCKEL: If folks want to see these moved into individual categories, raise your hand. Otherwise, we'll just keep them where they are, knowing that folks know -- You know, if it's an index of abundance versus providing information for something else. Amy and then Shannon.

DR. SCHUELLER: I don't -- Personally, I don't like this laundry list of items, and I think that a lot of these things should be considered, given this is a benchmark, in the categories that are appropriate. Like the deepwater longline survey is a fishery-independent survey, and so why -- We should probably put it into that section. I guess my other question is this seems like a laundry list, and I didn't hear where this came from, the list, and I guess my question, to the group, is like are all of these things actually going to provide some data that will be useful in a stock assessment? I can imagine how it would be interesting to look at some of these datasets, but incorporating them into an assessment is a whole other level, I guess, and so I think it's nice to have a list, but maybe we should be refining it.

DR. NEER: Amy, this list was kind of put together -- It was put together by the planning team, when they were reviewing the terms of reference, as, oh, these are other things that might be good to look at, and that's where this list came from, and it didn't actually make it into each of the individual sections by working group, but that's certainly possible and easy to do, if that's what the SSC thinks they would like.

DR. BUCKEL: We'll go to Shannon and then Kai.

DR. CALAY: I think that our thinking, when reviewing similar statements of work, has been that, you know, these are all research topics that, you know, could inform the stock assessment, if they were reviewed and they were deemed appropriate, and the reason that we've tended to keep them separate has really been to preserve the notion that these are not required elements of any particular project, but they are -- They are research initiatives that the council, or the SSC, or the planning team, has identified that we should evaluate for use in stock assessment. I don't have a strong

opinion about whether you put them under the appropriate bullet point or not, and I do have a strong opinion that we don't suggest that these be required elements of the stock assessment, but just evaluated and used as appropriate.

DR. BUCKEL: Great point, Shannon. Thank you for that clarification, and so, if these are parsed out into the other categories above, that we need to have a qualifier statement that is highlighted in yellow there that these are non-traditional and should be considered. Kai.

DR. LORENZEN: I mean, when I look at the list, I think, obviously, the thing that jumps out is the South Atlantic Red Snapper Research Program, just, you know, for its size, the fact that it produces some data that are different, absolute abundance estimates from two different methods that are different from the data we usually have, and the fact that you can bet there is going to be a lot of pressure to use it, and so, whereas the others -- I can see that there might be some discussion about the Florida reef fish survey, but, of course, that only covers a part of the stock, but what I'm saying is I think maybe one can add -- From my perspective, it's important to do something somewhat explicit with the South Atlantic red snapper program, more so than with the others, and they seem to be smaller items on this list.

DR. BUCKEL: Thanks, Kai. Fred Serchuk.

DR. SERCHUK: Thank you, Chair. Can we go back to Part A for a second? I don't mean to hold up things, but I'm concerned --

DR. BUCKEL: No problem.

DR. SERCHUK: Maybe it's because -- I'm troubled, and this may seem very petty, but I'm troubled by the word "ageing facilities", because that could refer to buildings that have been built at different times, and might we make it a little bit clearer, by saying "across age readers in different facilities"? An ageing building can be an old building.

DR. NEER: Or "ageing labs".

DR. SERCHUK: Well, the point is that I would like to use the word "age" again, because "ageing" can refer to ageing fish, and it can refer to growing old.

DR. BUCKEL: Excellent point.

DR. NEER: It should be "ageing", meaning the act of ageing something else.

DR. SERCHUK: The reason I raise it is I have seen "ageing" and "aging" both referring to facilities, and I just think it would be clear if you said "age readers in different facilities", but I don't want to spend a lot of time on it, but I just thought that it could be confusing. Thank you.

DR. BUCKEL: Yes, it was, and how about that edit, "fish age readers in facilities"?

DR. SERCHUK: Thank you.

DR. BUCKEL: Thank you. Wally.

DR. BUBLEY: I will start off with I like Kai's thought process with splitting out the South Atlantic Red Snapper Research Project into its own, because that is a larger, probably more elaborate, component going on with it, and I also wanted to mention that there is an ongoing selectivity study that should be available during that time period, with multiple gears, that South Carolina DNR is performing with Florida right now, and so we should have a better indication of selectivity for some of the gears that are being used as well.

DR. BUCKEL: Thanks, Wally. I think the South Atlantic red snapper -- You know, we had the parenthetic statement there, and so this was about the abundance estimation that's going to come out of that, but there is other life history and spatial information that's going to come out of that that might inform some of the other aspects of the stock assessment model, and so it was specific to this auxiliary data that will be collected in addition to the abundance estimates, the absolute abundance estimates. All right. Thanks for capturing those comments, Judd. Other comments on the red snapper TORs?

DR. NEER: There is still the assessment section and the review section.

DR. BUCKEL: Any more comments on the data section of the TORs? Thanks, Julie.

DR. NEER: Don't skip ahead. Jeff, I do have one question, and are you okay with leaving this -- Is the SSC okay with leaving it up to staff to make these modifications, to put these things in the appropriate groups up above, with regard to this list, leaving it up to SEDAR staff, and council staff, to make those changes, because we do need to get this in the briefing book for the March council meeting, which is due on Tuesday, or does the SSC wish to spend the time and tell us where to put these things under A, B, C, or D now?

DR. BUCKEL: Speaking for myself, I fully trust you and the council staff to put them in the right place, but I will let others weigh-in.

DR. NEER: We will make it its own thing for the research project. It will get its own, as indicated.

DR. BUCKEL: Chip.

DR. COLLIER: Sorry. Just thinking about the data workshop and the South Atlantic Research Project, it is going to be a little bit challenging, because we're not going to have all the information for that, and we're going to have some of it, and it hasn't been through review, and so it's going to be hard to make its own section underneath, or within this data workshop portion, and that's why the second workshop is planned to -- Before the assessment workshop, to talk about how to integrate this dataset properly, and it is a weird dataset, because some of it is index, and some of it is more assessment-related, where it's talking about total abundance, and so it is a bit of a challenge, and it's a square peg, and we're trying to put it into a round hole, at least from what we're looking at right now, or what we were looking at a couple of years ago, or last year, when we're trying to make this, and it's a different beast than the data that we've typically used.

DR. BUCKEL: Thanks, Chip. Good point.

DR. NEER: Just to be clear, there is no second data workshop to look at this. There were some webinars that were scheduled.

DR. COLLIER: There is funding for a workshop to look at this, but you're correct that it's not a second data workshop.

DR. NEER: And it's not on the current schedule, the project schedule. Are you referring to the CIE review of the project?

DR. COLLIER: It's going to be after the CIE review, I believe, and I'll have to look at it.

DR. BUCKEL: Go ahead, Kai.

DR. LORENZEN: So I had assumed, originally, that this was -- You know, the South Atlantic red snapper red project here was looking at the whole thing, including the absolute abundance estimates and so on, and so, if that's not the case, I'm wondering -- I mean, does it need -- So, for that workshop that is planned to look at that data, which is separate from the CIE review, I guess, because the CIE review presumably will be just about the outputs of that project, whereas, here, we're looking at how to use that information, if one wants to be very strict, if and how to use that information, and so I'm wondering whether then maybe we need a terms of reference for that workshop as well, and, as Julie pointed out, it should be on the schedule specifically as well, if that was --

DR. BUCKEL: Thanks, Kai. Chip or Julie, should we look at the schedule? If it's not on the schedule --

DR. COLLIER: If you pull it up, if you scroll down a bit --

DR. NEER: If it's going to be after the project has gone through it's CIE review -- Kyle, you had stated that that CIE review is scheduled in when of the research project planning?

DR. SHERTZER: I don't know that it's scheduled yet, but it will be at least a few months after the report is due, which is August of 2025.

DR. NEER: Okay, and so these webinars, which we have on the schedule, were put in place with the understanding that that would be after that CIE workshop, and that's a review of just the project and not this assessment, but we didn't -- We don't have an additional workshop planned to add this in, and so, Chip, what were you thinking, because this is --

DR. COLLIER: Outside of SEDAR, we got funding, through the spend plan, I think is the name of it, to hold a workshop for this, and so it might not be -- It might be best to have an in-person meeting, and it might be best to do it through webinar, and we just don't know enough about this type of data, and what is needed, and so we do have the ability to do it, and it won't come out of SEDAR's budget, and so I know that's a concern of yours.

DR. NEER: No, it's not, and it's actually more of a timing thing, because, if you're going to schedule that after this, but then we would want to hold -- We would want to probably hold off

these webinars dealing with this topic until after this additional workshop was held, which could potentially impact the entire schedule.

DR. COLLIER: Well, that's what this workshop is. It's either going to be a webinar or these workshops.

DR. NEER: I'm sorry. Okay. So what you're saying is what is built in the schedule now, these two webinars, you're saying may not be two webinars and may be an in-person workshop instead.

DR. COLLIER: Correct.

DR. NEER: But it's outside of SEDAR, and so it should not be on this schedule?

DR. COLLIER: I mean, this is where it gets confusing.

DR. NEER: It sounds like we might need to have some more discussion. The SSC can focus on the terms of reference for today.

DR. BUCKEL: All right. Thanks, Julie and Chip. Okay. Judd, you've got some notes there that captures that discussion for the data portion of the TOR. Now on to the assessment portion of the red snapper TORs, if folks could read through that, or, if you've read thorough them already, and you have some notes, just raise your hand. Go ahead, Genny.

DR. NESSLAGE: Thanks, Jeff. I guess I was wondering if 2 could be developed a little bit more. This seems -- I know you may not know yet exactly what you're planning to try, and I totally respect that, but this seems like there's going to be no testing of these alternative approaches, and it's going to take something different, and I guess where I'm coming from is that Amy and I have done a little bit of simulation testing, using the menhaden catch-at-age model, just seeing what would happen if you incorporate one annual estimate of abundance in there, and, depending on how you do it, and how it's treated and how large the uncertainty is around that exterior estimate, you can really change the answers, and potentially bias the whole assessment, and so I guess I was wondering if there's any plans to do any simulation testing of whatever approach you adopt, ultimately, for incorporating the research program data. Thanks.

DR. BUCKEL: Thank you, Genny. Kyle, to that point?

DR. SHERTZER: To that point, the way you described building in an absolute abundance estimate would be sort of one approach that would be on the extreme side of the simple side, and on the other extreme would be the more complicated bit about building in the full -- The full statistical methodology from CKMR into the stock assessment approach, and sort of evaluating those two approaches, and maybe some ideas in between, is something that we're working on. We actually had a post-doc who was devoted to that, who just took a job, and so we're now sort of looking for a replacement for that post-doc, and so if anyone on the call knows of somebody who would be really good as a post-doc to work on this project, let me know, because we do have funding for that, and so we are planning to do that, that research, and that would be something that could get reviewed as part of this assessment cycle.

DR. BUCKEL: Thanks, Kyle. Judd, thanks for getting that bullet in there. Other additions, or edits, to the assessment TORs for red snapper?

DR. CURTIS: One thing that we have highlighted here, in Number 3, is provide estimates of stock population parameters, and that's just kind of a generic statement, and we did want to get some SSC feedback on if there was any specific parameters that the SSC wanted to see in the assessment review, in the assessment phase.

DR. BUCKEL: Any ideas for Judd's question?

DR. CURTIS: If the SSC is happy to keep that broad, and more generic, then we can stay with that as well.

DR. BUCKEL: It looks like there were no hands on that, Judd, and so we'll stay broad. All right. Now on to the review workshop TORs.

DR. NEER: Judd, under Number 5, I would suggest that you take out "research track", so that it just says "ways to improve the assessment process", and so, depending on what the council decides, we're covered.

DR. BUCKEL: Good one, Julie.

DR. NEER: The same comment for the next bullet, the evaluation of the stock assessment and addressing each terms of reference.

DR. BUCKEL: So maybe make a comment to do a search for "research track" throughout the document.

DR. NEER: I believe it says "research track" in the title, and we may wish to modify that as well.

DR. BUCKEL: Under 2, the second bullet, what does that mean, "priority modeling issues clearly stated and addressed"? I mean, it's late in the day, but I'm not sure what that means.

DR. NEER: That usually refers to giving them kind of a nudge to say, if there were any issues that came up that the modelers found particularly difficult, or challenging, and how they addressed those challenges, and that's kind of what that -- It's things they highlighted in their reports, is how I always interpreted that, but somebody might have a different interpretation.

DR. BUCKEL: Thank you. Please raise your hand if you have any -- Alexei.

DR. SHAROV: I'm looking at this one, and I was -- Even though we finished, just finished, reviewing the TORs for the assessment, but I went back to double-check, and I didn't see anything about updating the biological reference points, and did I fall asleep, or is there a reason that we didn't discuss the BRPs?

DR. BUCKEL: You did not fall asleep, Alexei, because we didn't talk about them.

DR. SHAROV: Not that I'm insisting, but I thought -- Well, of course, it depends on the type of the assessment, but you usually would expect a review and update of the BRPs as well, and, if I'm wrong, I would be happy to shut up. Thank you.

DR. BUCKEL: Marcel.

DR. REICHERT: Is that perhaps because this was initially a research track, which is not meant to make management recommendations? That may be one of the reasons why some of that is not in here, I was just thinking.

DR. NEER: Yes, Marcel, that's probably a good point, and that's also why estimate stock population parameters are listed kind of vaguely initially, because you wouldn't be providing management advice, and you wouldn't be doing projections, and there's also no comment about projections in here, in either the assessment or review stages at this point.

DR. REICHERT: Exactly. Thank you.

DR. BUCKEL: So, Julie, I know you had asked if you were okay with SEDAR and council staff making edits in the data, which we were, and, unless SSC members have heartburn over it, I would be okay with checking the research track assessment TORs, right, and there's the standard language for these biological reference points, as well as projections, and adding those in, if this goes -- I guess we'll see what the council decides for the research track, and to add that, the appropriate text.

DR. NEER: Yes, that's a good idea, and we ultimately, depending on how they go, might need to, I don't know, bring this back to you guys in April or something, and I've got to figure it out now, because I was thinking through it in my head, and, depending on which way they go, you need to put more or less in this section.

DR. BUCKEL: Okay, and it's a domino effect from this decision.

DR. NEER: Yes, and waiting on their decision of which way they want to go will impact portions of these things. If it is in fact pretty straightforward in your standard language that you've used for what you expect out of an assessment for any of your previous ones, it may not have to come back to you, but I'm going to ponder that, and discuss it with council staff, and the council chair as well, to make sure, and maybe just the council chair can weigh-in and help us, when we move forward, and the SSC chair.

DR. BUCKEL: Thanks, Julie. We don't want to change them now, if it ends up remaining a research, and so great. All right. Thanks, Alexei. Good catch on the assessment TORs. Any other edits, or additions, to the review TORs for red snapper? Judd, if there are no hands, are there any other --

DR. CURTIS: No hands.

DR. BUCKEL: Any other parts of the TORs?

DR. CURTIS: The review workshop TORs are the last component of that document, and so, from here, we can go on to asking for volunteers for each of those different phases of the assessment.

DR. NEER: Judd, we're not actually going to be asking for everyone at this point, because, currently, it's a schedule on a research track that encompasses two-and-a-half years, and so all we're asking for, in terms of participation at this point, is volunteers for the ADT, which is the assessment development team, which is part of the research track, which will be involved in both the data and assessment stages.

We would like three to five people for that section, and then, additionally, folks for the data process, and so, if you feel like you don't want to volunteer for data and assessment, and you just want to do -- You're just a data person, and you're perfectly happy to step back at the next stage, this would be where we would ask for you now, and then we will come back to you, in approximately a year, and ask for people who might be willing to volunteer for the assessment process and who might be willing to participate in the review. Just one note that, if you feel like you might be interested in serving as a reviewer, then you should not volunteer for any of these data stages at this point.

DR. CURTIS: Julie, how many members did you need for the ADT at this time? Four to five?

DR. NEER: Yes, four to five.

DR. REICHERT: Julie, can I ask a quick question?

DR. NEER: Sure.

DR. REICHERT: So, if this does not become a research track, is the -- Didn't you say earlier that the ADT then becomes a moot point?

DR. NEER: Right. What will happen is we are planning as if we're going forward with a research track. If in fact the council recommends, and the center agrees, to move this to a benchmark, then those folks who volunteered for the ADT -- We will come back to you and say do you wish to serve on data, assessment, or both, and we'll reallocate you as just panelists, as opposed to ADT members.

DR. REICHERT: Thank you.

DR. NEER: I know it's a little confusing, and I'm sorry, and, if you know that you want to volunteer for the assessment, you can throw your name in the hat now, and we'll make a note, but we don't need that yet, if you want to ponder.

DR. BUCKEL: Great. The hands are for those folks that want to be added, and we'll just go down the list. Dustin.

MR. ADDIS: I think Julie just answered my question. I'm currently on the ADT, and so I guess, if it becomes a benchmark, then I would like to volunteer to be on the assessment panel.

DR. BUCKEL: Thanks, Dustin. Wally.

DR. BUBLEY: Yes, I'm volunteering my services.

DR. BUCKEL: Thanks, Wally. Jie.

DR. CAO: Yes, I'm happy to participate in the ADT or the assessment panel.

DR. BUCKEL: Great. Thanks, Jie. Steve.

DR. TURNER: Yes, both.

DR. BUCKEL: Excellent. Julie, is that enough for you at this point?

DR. NEER: Yes, that's great.

DR. BUCKEL: Awesome. Thanks for the quick volunteering. We didn't have to put any carrots out there today. All right. Then the next is the data workshop, and you need three, and did you say that we didn't have to go there yet, or --

DR. NEER: We don't need additional data people, but, if there's people who want to just do data, sign-up right now, and raise your hand, and we'll take you too, and we want to get the data people identified, and so, if you absolutely do not want to be part of the ADT, but you would be interested in the data part, raise your hand now.

DR. BUCKEL: That was a harder sell, but, as you said, Julie, you've got the folks on the ADT, and so that --

DR. NEER: Yes, and, if in fact this transitions to a benchmark, and we actually need people, more people, for data, we will come back and ask you. Don't worry. I am not shy.

DR. BUCKEL: All right. Thanks, Julie. Steve.

DR. TURNER: If you need someone for data, fine.

DR. BUCKEL: Thank you, Steve. All right. I think -- Julie, do you have what you need there?

DR. NEER: Yes, and we can work with this to start for sure, and then, once the council makes a decision on a process, we can come back, if need be. Thank you.

DR. BUCKEL: All right. Great. Thank you, Julie. We appreciate the help on this. All right, Judd. We have a few other Other Business items, I think.

DR. CURTIS: Yes, and so we just knocked out the tilefish discussion already, and next up is Julia Byrd wanted to give a quick update on just the citizen science survey that is ongoing, and, Julia, if you're ready.

## CITIZEN SCIENCE SURVEY UPDATE

MS. BYRD: Thanks, Judd. Good afternoon, everyone. I just wanted to share a little information with you guys about some research that the Citizen Science Program has going on, and we are working with a couple of groups of researchers to help us better understand what baseline levels are about kind of folks' knowledge, confidence in, and trust in the citizen science process of collecting data to inform fisheries management decisions, and we're interested in collecting kind of baseline information from three of our biggest stakeholder groups, fishermen, scientists, and managers, and one member of the SSC, Jennifer Sweeney-Tookes, mentioned the research team that she's leading to try to gather information along these themes from a broader group of fishermen, but I wanted to make you guys aware that we're working with Rick Bonney, who is the Director Emeritus of the Public Engagement and Science Program at Cornell's Lab of Ornithology, and he's leading the research to gather information from a broader group of scientists and managers, via an online survey.

We are planning to use the findings from Jennifer's team and Rick's research to help guide the future direction of our Citizen Science Program, and, since you guys are on the council's SSC, you're kind of scientists working within the region, and so I just wanted to make you aware of Rick Bonney's research, and I wanted to give you a heads-up if his name pops up in your inboxes, and so, again, I just wanted to mention this as an FYI to all of you guys. I'm happy to answer questions, but that's all I had, Judd.

## OTHER BUSINESS

DR. CURTIS: Okay. Thanks, Julia. Next, just a quick discussion of the chair and vice chair appointments, and so the term is coming up for Jeff and Fred in April of this year, and, at this point, we'll be looking at appointing a new chair and vice chair. Just, if you are interested, just let myself or Chip or Jeff know, and we'll have a more lengthy process, or an official process, in-person at our April meeting, and so that was all that revolved around.

Then, lastly, something that I wanted to do with the SSC, just towards the end of each of our meetings, is just give a snapshot of what some of the upcoming agenda items might be, for the April meeting at least, and so keeping spreadsheets on all the upcoming meetings, depending on when things are falling, such as assessments, but here's kind of what is on tap for our April in-person meeting.

Marcel, you had mentioned that we receive a SARSRP update from Will Patterson and his team, as well as getting a Florida State Reef Fish Survey review from Florida FWC, and Kyle will be onboard, giving a couple of presentations on a minimizing discards project and a low recruitment workgroup update, and then -- I won't list them all off, but you can see what's coming up, and, if you have any questions, or if there's any other pressing topics that any members think would merit further discussion, you know, we can discuss that now, and/or you can email, and we'll try to fit it onto the agenda. You can see, down there, that we're -- The target is to keep that to two total days, and not above that, and so we might have a little bit of additional business, after the council meeting in March, to add to the agenda, but, right now, we're more or less on schedule for two full days. I will open it up to the floor for any questions or discussion, Chair.

DR. BUCKEL: Thanks, Judd. Do folks have any comments on the April topics? Go ahead, Marcel.

DR. REICHERT: This doesn't happen too often, but there are no stock assessments to discuss, but are we -- Are you planning to start at noon on one day and go until noon the other day or two days from 8:00 to 5:00, just for scheduling purposes?

DR. CURTIS: It's going to be our kind of standard format, where a travel day will be Tuesday morning, and we'll start Tuesday at noon. The Socioeconomic Panel will be meeting from Monday at noon to -- Excuse me. They'll be starting about 1:30 on Tuesday. The Socioeconomic Panel will be meeting from 1:30 on Monday until noon on Tuesday. The SSC will be meeting from 1:30 on Tuesday until noon on Thursday.

We've just about got all the travel information squared away for that meeting, and so I'll be sending that out early next week, and so look for that to book your hotel appointments and start planning your travel, and, of course, if you need, you know, some extra travel time and things, just send me an email, or Kelly Klasnick an email, to get the permissions for the extra day of travel outside of the date ranges that are approved.

DR. BUCKEL: Good question, Marcel, and thanks for the answers, Judd. That's good to know, on the actual time of day. Does anyone have any additional topics that they've been -- It looks like we've got two full days there, or almost two full days, and so -- All right. If there's no hands, Judd, what's up next? Are we done with all the Other Business items?

DR. CURTIS: Yes. That concludes all the Other Business, and so you've got an opportunity for public comment. If you're a member of the public, and you would like to speak, please raise your hand, and we'll unmute you. I am not seeing any hands, Jeff, for public comment, and I just checked, and there was no written comment submitted during this meeting either, and so next up is just our consensus statement and recommendations, to close up.

## CONSENSUS STATEMENT AND RECOMMENDATIONS

DR. BUCKEL: All right, and so we can scroll through Judd's notes. In the past, folks -- I don't know if it's because everybody is burned out at the end of the day, but we haven't had too many comments doing it that way, and so I will -- Raise your hand if you would like to scroll through the notes and have a chance to read it and provide edits now, or, if nobody raises their hands, you'll have an opportunity -- We'll send this document out, this draft report out, to all the SSC members, and you can make edits, and then send those back to me, and then I will put all those edits together in the draft final report for Judd to take one last look at before it becomes the final report.

If you would like to scroll through Judd's text now, we can. Just raise your hands if you want to do that. Otherwise, if there is no hands raised, you will get your chance to edit after it's emailed to you.

DR. CURTIS: One thing I will add, and I said it before, at the end of the MSE presentation, but, if there is additional comments, or scenarios, that people want to see, but don't feel like it merits ending up in the SSC consensus report, we can compile those and send those out to Adrian in a different document.

DR. BUCKEL: Judd, thanks for that. All right. No hands, and so I will take that as everyone is -- Judd and I are going to get lots of good edits back from all the SSC members. Right, Judd? By email.

DR. CURTIS: Absolutely. I will await the comments with great anticipation.

DR. BUCKEL: That's right. That's right. Okay, and so the plan will be to get you all the draft report, sometime next week, and definitely by the end of next week, and then we'll ask -- You know, hopefully by the middle of next week, and then we'll ask for comments back by Wednesday -- Around Wednesday, February 21, so we'll have time to incorporate those and then get that final report to the council's webpage for their early March 2024 meeting. Does that sound like a good timeline, Judd? I see here that you've got February 23, and so that will give us a couple of days. Great.

DR. CURTIS: Yes, that sounds good. We have a little bit more of a time crunch this time before the March council meeting, just the way this SSC meeting fell, but, given that it was just a one-day, we should be able to turn that around. I'm hopeful we'll be able to turn it around.

DR. BUCKEL: Yes. Great. Judd and I will get this -- We'll do our best to get it to you by the middle of next week. Anything else, Judd?

DR. CURTIS: No, that's it. As usual, stay tuned for a potential July/August webinar, you know, a half-day to a full day, depending on what business comes out of the March and June council meetings, and we've had those in the past, and so just keep an eye out for those, and then we'll be meeting in-person in October, that same week, in Charleston, and so that's it from my end. Thank you all for your contributions and recommendations.

DR. BUCKEL: Thanks so much, Judd, and so, yes, thanks to all the SSC members for a great job today, and lots of good responses to the agenda action items, and thank you, Judd, for taking notes and monitoring hands and organizing all the meeting agenda and overview and attachments, other attachments, and also thanks to staff and members from the council, SEDAR, Southeast Fisheries Science Center, and NOAA General Counsel for your help and for being available today, and, with that, the meeting is adjourned. Thanks, everyone.

(Whereupon, the meeting adjourned on February 9, 2024.)

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Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
February 29, 2024

# Attendee Report: Scientific & Statistical Committee Meeting (February 9, 2024)

Report Generated:
02/12/2024 06:54 AM EST

| Webinar ID | Actual Start Date/Time | Duration | # Registered | # Attended |
|---|---|---|---|---|
| 631-480-051 | 02/09/2024 08:26 AM EST | 8 hours 7 minutes | 95 | 84 |

## Staff Details

| Attended | Interest Rating | Last Name | First Name | Email Address |
|---|---|---|---|---|
| Yes | Not applicable for staff | Collier | 01Chip | chip.collier@safmc.net |
| Yes | Not applicable for staff | Council | South Atlantic | administrator@safmc.net |
| No | Not applicable for staff | Curtis | Judd | judd.curtis@safmc.net |

## Attendee Details

| Attended | Interest Rating | Last Name | First Name | Email Address |
|---|---|---|---|---|
| Yes | 52 | Addis | Dustin | Dustin.Addis@myfwc.com |
| Yes | 63 | Bauer | Tracey | tbauer@asmfc.org |
| Yes | 50 | Belcher | Carolyn | carolyn.belcher@dnr.ga.gov |
| Yes | 33 | Bianchi | Alan | Alan.Bianchi@deq.nc.gov |
| Yes | 50 | Brouwer | Myra | myra.brouwer@safmc.net |
| Yes | 84 | Bubley | Walter | bubleyw@dnr.sc.gov |
| Yes | 71 | Buckel | Jeff | jabuckel@ncsu.edu |
| Yes | 76 | Bullard | Elizabeth | bullarde@dnr.sc.gov |
| Yes | 46 | Byrd | Julia | julia.byrd@safmc.net |
| Yes | 42 | CARMICHAEL | 01JOHN | john.carmichael@safmc.net |
| Yes | 41 | Calay | Shannon | Shannon.Calay@noaa.gov |
| Yes | 83 | Cao | Jie | jcao22@ncsu.edu |
| Yes | 61 | Coffill-Rivera | Manuel | manuelcoffill@gmail.com |
| Yes | 41 | Coggins | Lew | lewis.coggins@NOAA.gov |
| Yes | 37 | DeVictor | Rick | rick.devictor@noaa.gov |
| Yes | 41 | Dumas | Chris | dumasc@uncw.edu |
| Yes | 64 | Flowers | Jared | jared.flowers@dnr.ga.gov |
| Yes | 61 | Gartland | Jim | jgartlan@vims.edu |
| Yes | 74 | Gentry | Lauren | lauren.gentry@myfwc.com |
| Yes | 40 | Glazier | Edward | Edward.Glazier@noaa.gov |
| Yes | 51 | Grimes | Shepherd | shepherd.grimes@noaa.gov |
| Yes | 46 | Guyas | Martha | mguyas@asafishing.org |
| Yes | 82 | Harford | Bill | bill@natureanalytics.ca |
| Yes | 42 | Helies | Frank | frank.helies@noaa.gov |
| Yes | 65 | Henriquez | Vania | vania@natureanalytics.ca |
| Yes | 37 | Hiers | Homer | hiersh@dnr.sc.gov |
| Yes | 92 | Hordyk | Adrian | adrian@bluematterscience.com |
| Yes | 40 | Hornstein | Jesse | jesse.hornstein@dec.ny.gov |
| Yes | 48 | Howington | Kathleen | kathleen.howington@safmc.net |
| Yes | 42 | Iberle | Allie | allie.iberle@safmc.net |
| Yes | 39 | Iverson | Kim | saifish1@me.com |
| Yes | 46 | Key | Meisha | meisha.key@safmc.net |
| Yes | 39 | Klibansky | Nikolai | nikolai.klibansky@noaa.gov |
| Yes | 66 | Klibansky | Lara | lara.klibansky@gmail.com |
| Yes | 58 | Larkin | Michael | Michael.Larkin@noaa.gov |
| Yes | 41 | Lazarre | Dominique | Dominique.Lazarre@noaa.gov |
| Yes | 35 | Lazo | Sarah | sarah.lazo@noaa.gov |
| Yes | 96 | Lorenzen | Kai | klorenzen@ufl.edu |
| Yes | 89 | Marhefka | Kerry | kerrymarhefka@gmail.com |
| Yes | 92 | Marhefka | 00Kerry | kerryomarhefka@gmail.com |
| Yes | 59 | Markwith | Anne | anne.markwith@deq.nc.gov |
| Yes | 72 | McClair | Genine | genine.mcclair@myfwc.com |

| | | | | |
|---|---|---|---|---|
| Yes | 93 | McWhorter | Will | wdmcwhorter@gmail.com |
| Yes | 46 | Mehta | Nikhil | nikhil.mehta@noaa.gov |
| Yes | 59 | Moore | Peyton | pamoore@natureanalytics.ca |
| Yes | 44 | Morgan | Keyaira | morgank@dnr.sc.gov |
| Yes | 67 | Murphey | 00Trish | trish.murphey@deq.nc.gov |
| Yes | 79 | Neer | Julie | julie.neer@safmc.net |
| Yes | 44 | Nesslage | Genny | nesslage@umces.edu |
| Yes | 60 | Package-Ward | Christina | christina.package-ward@noaa.gov |
| Yes | 42 | Potter | Caroline | caroline.potter@noaa.gov |
| Yes | 36 | Ramsay | Chloe | chloe.ramsay@myfwc.com |
| Yes | 46 | Records | David | david.records@noaa.gov |
| Yes | 76 | Reichert | Marcel | MReichert2022@gmail.com |
| Yes | 92 | Salmon | Brandi | brandi.salmon@deq.nc.gov |
| Yes | 57 | Sauls | Beverly | bevsauls1@gmail.com |
| Yes | 62 | Scharf | Fred | scharff@uncw.edu |
| Yes | 78 | Schmidtke | Michael | Mike.Schmidtke@safmc.net |
| Yes | 94 | Schueller | Amy | amy.schueller@noaa.gov |
| Yes | 73 | Scott | Rebecca | rebecca.scott@myfwc.com |
| Yes | 38 | Sedberry | George | george.sedberry@gmail.com |
| Yes | 91 | Serchuk | Fred | Fred.Serchuk@gmail.com |
| Yes | 64 | Seward | McLean | mclean.seward@deq.nc.gov |
| Yes | 61 | Sharov | Alexei | alexei.sharov@maryland.gov |
| Yes | 46 | Shertzer | Kyle | kyle.shertzer@noaa.gov |
| Yes | 39 | Sinkus | Wiley | sinkusw@dnr.sc.gov |
| Yes | 43 | Smart | Tracey | smartt@dnr.sc.gov |
| Yes | 39 | Smillie | Nick | Nick.smillie@safmc.net |
| Yes | 38 | Spanik | Kevin | spanikk@dnr.sc.gov |
| Yes | 41 | Stemle | Adam | adam.stemle@noaa.gov |
| Yes | 98 | Sweeney Tookes | Jennifer | jtookes@georgiasouthern.edu |
| Yes | 40 | Travis | Michael | mike.travis@noaa.gov |
| Yes | 62 | Turner | Steve | scturner160@gmail.com |
| Yes | 35 | Valmassoi | Andrew | andrew.valmassoi@deq.nc.gov |
| Yes | 55 | Vincent | Matthew | matthew.vincent@noaa.gov |
| Yes | 53 | Walsh | Jason | jason.walsh@deq.nc.gov |
| Yes | 92 | Wamer | David | dwameriii@bellsouth.net |
| Yes | 86 | Wiegand | Christina | christina.wiegand@safmc.net |
| Yes | 32 | Wilson | Reid | rmw6418@uncw.edu |
| Yes | 67 | Withers | Meg | meg.withers@safmc.net |
| Yes | 96 | iverson | Kim | kim.iverson@safmc.net |
| Yes | 95 | l | i | captaindrifter@bellsouth.net |
| Yes | 42 | vecchio | julie | vecchioj@dnr.sc.gov |
| Yes | 95 | zales | bob | bobzales@sfaonline.org |
| No | 0 | Cross | Tiffanie | tiffanie.cross@myfwc.com |
| No | 0 | Curtis | Judd | judd.curtis@safmc.net |
| No | 0 | Foss | Kristin | kristin.foss@myfwc.com |
| No | 0 | Licandeo | Roberto | robertolicandeo@gmail.com |
| No | 0 | McGrew | Grace | mcgrewg@g.cofc.edu |
| No | 0 | Owens | Marina | marina.owens@myfwc.com |
| No | 0 | Roden | Rodney | retley2@gmail.com |
| No | 0 | Stewart | Mark | mstewar@gmail.com |
| No | 0 | Williams | Erik | erik.williams@noaa.gov |
| No | 0 | Wolfe | Wes | wesleyswolfe@gmail.com |
| No | 0 | merino | joy | joy.merino@noaa.gov |