GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

MEETING OF THE STANDING & SPECIAL REEF FISH, SOCIOECONOMIC & ECOSYSTEM SCIENTIFIC AND STATISTICAL COMMITTEES

GMFMC Office — Tampa, Florida

JULY 7-8, 2022

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Luiz Barbieri.....
Harry Blanchet.....
Roy Crabtree.....
Benny Gallaway.....
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OTHER PARTICIPANTS

Lisa Ailloud.....SEFSC
Leann Bosarge.....GMFMC
Andrew Bryant.....AL
Shannon Calay.....SEFSC
Michael Drexler.....Ocean Conservancy
Tom Frazer.....GMFMC
Mike Grieco.....FL
Peter Hood.....NMFS
Eric Schmidt.....FL
Katie Siegfried.....SEFSC
Mike Travis.....NMFS
Yuying Zhang.....FL

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The Meeting of the Gulf of Mexico Fishery Management Council Standing and Special Reef Fish, Special Socioeconomic & Special Ecosystem Scientific and Statistical Committees convened on Thursday morning, July 7, 2022, and was called to order by Chairman Jim Nance.

INTRODUCTIONS
ADOPTION OF AGENDA
SCOPE OF WORK
SELECTION OF SSC REPRESENTATIVE FOR THE AUGUST 22-25, 2022 GULF COUNCIL MEETING IN CORPUS CHRISTI, TEXAS

CHAIRMAN JIM NANCE: Good morning, everyone. My name is Jim Nance, and I am the chair of the Scientific and Statistical Committee for the Gulf of Mexico Fishery Management Council. We appreciate your attendance on this webinar and input in this meeting. Representing the council, we have Dr. Tom Frazer.

Council Staff in attendance include Carrie Simmons, John Ryan Rindone, Lisa Hollensead, Bernie Roy, Beth Hager, and Emily Muehlstein. Notice of this meeting was provided to the Federal Register, sent via email to subscribers of the council's press release email list, and was posted on the council's website.

This week's meeting will include the following topics: Review of the Alternative Run for the SEDAR 72 Base Model Using Florida's State Reef Fish Survey; Review of Discard Data for Gag Grouper, Red Grouper, Greater Amberjack, and Red Snapper; Presentation of a Discussion Support Tool for Evaluating the Impact of Short and Long-Term Management Discussions on the Gulf of Mexico Red Snapper Resource; Discussion of the ABC Rule Modifications; and a Discussion and Presentation of the Wenchman Data Evaluation and Consideration for Stock-Specific Catch Limits. We'll also have, during this meeting, public comments.

This webinar is open to the public and is being streamed live and recorded. A summary of the meeting and verbatim minutes will be produced and made available to the public on the council's website. For the purpose of voice identification, and to ensure that you are able to mute and unmute your line, please identify yourself by stating your full name when your name is called for attendance. Ms. Roy.

MS. BERNADINE ROY: Lee Anderson. Luiz Barbieri.

DR. LUIZ BARBIERI: Luiz Barbieri.

MS. ROY: Harry Blanchet.

MR. HARRY BLANCHET: Harry Blanchet.

MS. ROY: Dave Chagaris. Roy Crabtree.

DR. ROY CRABTREE: Present.

MS. ROY: Benny Gallaway.

DR. BENNY GALLAWAY: Benny Gallaway.

MS. ROY: Doug Gregory.

MR. DOUG GREGORY: Doug Gregory.

MS. ROY: David Griffith.

DR. DAVID GRIFFITH: David Griffith.

MS. ROY: Paul Mickle.

DR. PAUL MICKLE: Paul Mickle.

MS. ROY: Trevor Moncrief.

MR. TREVOR MONCRIEF: Trevor Moncrief.

MS. ROY: Jim Nance.

CHAIRMAN NANCE: Present.

MS. ROY: Will Patterson.

DR. WILL PATTERSON: Will Patterson.

MS. ROY: Sean Powers. Steven Scyphers.

DR. STEVEN SCYPHERS: Steven Scyphers.

MS. ROY: Jim Tolan.

DR. JIM TOLAN: Jim Tolan.

MS. ROY: Rich Woodward. Jason Adriance. Michael Allen.

DR. MICHAEL ALLEN: Mike Allen.

MS. ROY: John Mareska.

MR. JOHN MARESKA: John Mareska.

MS. ROY: Luke Fairbanks.

DR. LUKE FAIRBANKS: Luke Fairbanks.

MS. ROY: Cynthia Grace-McCaskey.

DR. CYNTHIA GRACE-MCCASKEY: Cindy Grace-McCaskey.

MS. ROY: Jack Isaacs.

DR. JACK ISAACS: Jack Isaacs, the spiller of coffee, is here.

MS. ROY: Mandy Karnauskas.

DR. MANDY KARNAUSKAS: Here.

MS. ROY: Josh Kilborn.

DR. JOSH KILBORN: Josh Kilborn.

MS. ROY: Steven Saul. Tom Frazer.

DR. TOM FRAZER: Tom Frazer.

MS. ROY: Thank you.

CHAIRMAN NANCE: Thank you very much. We appreciate all those in attendance, and I know some of you tried to get here and couldn't, but I greatly appreciate your efforts in trying to get to the meeting in person. We will go ahead and look at the agenda. Is there any changes to the proposed agenda, as printed? Seeing none, is there any opposition to accepting and adopting the agenda, as printed? Hearing none, we will go ahead and adopt the agenda.

We've had a chance to look at the minutes and meeting summaries from our last meeting, and are there any proposed changes to the minutes or to the meeting summary? Ryan.

MR. RYAN RINDONE: Sorry, Mr. Chair, and I forgot we had something to toss on here from the last council meeting. For the agenda, to add appointment of up to five SSC members for the collaborative workgroup with the South Atlantic Council to explore catch limits for unassessed species.

CHAIRMAN NANCE: Perfect. Yes, and thank you for reminding me.

We'll go ahead and put that in Other Business.

MR. RINDONE: I knew there was something, and it was like rattling around up there.

CHAIRMAN NANCE: Thank you, and so we'll go back to the agenda, just for a moment, and so we proposed, Ryan, that we need to add that to the Other Business. We had talked about, at the last meeting, being able to have SSC members from the Gulf added to that review group, or looking at the catch limits for other species, when we talked about goliath grouper, and so we're adding those to Other Business. Katie, did you have anything on the agenda or on minutes?

DR. KATIE SIEGFRIED: Thank you, Mr. Chair, and I wasn't sure if I was supposed to bring this up, or if Ryan was going to, but I have a really brief presentation, right before Lisa's, about SEDAR 72 that I would like to have added to the agenda.

MR. RINDONE: We're squeezing that right in there under the gag staff, since it's all germane to that discussion.

DR. SIEGFRIED: Okay. Thank you.

CHAIRMAN NANCE: Okay. Perfect. Thank you, Katie, and I'll make sure that we have you before we get to the main presentation. Thank you for that. With that change, is there any opposition to adopting the agenda with that change? Seeing and hearing none, we'll go ahead and adopt the agenda.

Is there any opposition or any changes that need to be made to the minutes and to the meeting summary from our last meeting, which was May 10 and 11? Hearing and seeing none, we'll go ahead and adopt the minutes and the meeting summary, without opposition.

For representation of the SSC at the meeting on August 22 through 25 in Corpus Christi, Texas, I'll be happy to go do that one, and I will represent the SSC at that meeting. Without any further interruption then, we'll go ahead and move into our first agenda item, which is Agenda Item Number V, which is the Alternative Model Run for the SEDAR 72 Base Model Using Florida's State Reef Fish Survey. Ryan, would you please give us the scope of work, and then Dr. Siegfried will present for the Center.

REVIEW: ALTERNATIVE MODEL RUN FOR SEDAR 72 BASE MODEL USING FLORIDA'S STATE REEF FISH SURVEY

MR. RINDONE: Sure. Dr. Siegfried is going to start off with

talking to you guys about a correction that was made with regard to the headboat data that were used both in the SEDAR 72 base model, using the Marine Recreational Information Program, and the SEDAR 72 alternative model run using Florida's State Reef Fish Survey. It's just a few slides on that, and she's going to detail what that correction was and how it maps into both models.

Then Dr. Ailloud is going to continue by presenting the revised results of those assessments to you guys, and recall the use of the Florida State Reef Fish Survey was a request from the council to use those private angling landings in place of MRIP's landings. The council requested this back in October of 2021, with diagnostics to see how the SRFS data would perform for gag, which is currently overfished and undergoing overfishing, regardless of which model, and so the headboat data issue doesn't have any -- It doesn't create any difference in that stock status determination.

Dr. Ailloud will go through everything with you guys, including revised management benchmarks and stock status estimates and projections. You guys should consider all of this information, and, if you find that the State Reef Fish Survey run is consistent with the best scientific information available, then you can recommend it as such, and, if you think it appropriate, you can recommend revised catch recommendations, as appropriate, for that, also.

Another consideration that we've provided some background research for you guys to consider is the definition of the proxy for the fishing mortality at maximum sustainable yield. One of the reasons for this is that there's a difference in the estimate of stock productivity that is inherent, based on which data stream you use for the private angling landings, and the stock productivity would be estimated to be higher under MRIP, compared to SRFS, and so, because you have different data streams that tell you -- That paint just a little bit different picture of the stock's productivity, you might want to revisit that proxy estimation, and so we're provided some empirical published research for you guys to look at for that, and Dr. Ailloud and Dr. Siegfried are both going to touch on that a little bit, also.

In November of 2021, when you guys looked at all this stuff originally, you had made the determination that Fmax, while appropriately calculated in the model, was not consistent with the biology of the stock, and just fishing wide-open-throttle like that was clearly not to the benefit of the stock. Gag seem to have a susceptibility to episodic mortality from red tide, and recruitment has been down for a little longer than the last decade, and so you guys thought some additional conservation measures were

necessary to rebuild the stock from its current depleted condition. I think that maps us to Dr. Siegfried's presentation, Mr. Chair.

CHAIRMAN NANCE: Thank you very much. I appreciate, Ryan, that scope of work, and that really did a great job of outlining what our purpose is today, to be able to look at this, and so, first, we'll have a presentation from Dr. Siegfried, and then from Dr. Ailloud, and so, Katie, go ahead and start your presentation, please.

DR. SIEGFRIED: Thank you, Mr. Chair. I'm sorry that I couldn't be there in-person, and we have Shannon there for you, and hopefully she can answer any questions in the off time that I can't answer during the actual sessions, but what I'm here to present to you is just what happened with the headboat data.

We very recently learned that the headboat data were pulled with a code, and it's a SASS code that omitted one headboat area, Area 23, from the landings, and it covers northwest Florida and Alabama, and so that's going to affect gag, what we're presenting in SEDAR 72. The issue was found in that code when the new analyst for the headboat survey was trying to run the CVs for SEDAR 68, which is scamp.

There is very little difference, okay, and so on the left is the headboat Gulf landings in number, and the red line is the -- Sorry. I accidentally cut off the legend, and the red line is the corrected, when Area 23 is included in the landings stream, and the blue line is what was provided previously for SEDAR 72. On the right is a little bit of perspective for you of what the total Gulf recreational landings are for SEDAR 72, and, as you can see, the blue line and the orange line are very, very close. An average of about 0.5 percent difference in the total landings is what we have for you here, and then a maximum difference, by year, of 1.6 percent, and so it's very small.

It affects two species, scamp and gag, and, because the operational assessment for SEDAR 68 hasn't been reviewed by the SSC, it's less of an urgent matter for you to attend to, and that model is being rerun with the updated data, and you will see it with the corrected data in September.

The gag landings and discards, once this error was found, were pulled with the corrected code, and it includes Area 23, and that is what Lisa will be using, or what she has used in all of these reruns that she has done over the last week-and-a-half that she will present to you today.

Although the difference is small, we wanted to rerun all of the gag models for you, because they are so -- We did this because gag is so close, in the rebuilding time, between the MRIP-FES-based model that was reviewed, late last year, and what is in this SRFS run that the council requested. This rebuilding timeline is still up for discussion, and, even though it was a really small change, we wanted to insert this small change in the data, to make sure that you see all of the information that you need to affect that timeline for rebuilding, and so it seems like a small change, but, as you'll see in the presentation with Lisa, it did happen to make a difference in the rebuilding timeline.

We did investigate other -- I shouldn't say "we". The new analyst for the headboat program did look into other species, and it is only for scamp and gag, and so we've contained the issue with that code, and we have made the corrections for you. Are there any questions about that?

CHAIRMAN NANCE: Katie, thank you very much for that presentation. Any questions from SSC members? Doug Gregory, please.

MR. GREGORY: Oh my god, right out of the gate.

CHAIRMAN NANCE: Yes, and you should have left your hand down for a minute.

MR. GREGORY: I seem to recall that there was some aspect of the headboat data that was used in the private rec data analysis, and, if I'm correct, was that aspect of the headboat data reevaluated?

DR. SIEGFRIED: Lisa will go over that for you in her presentation. What she had to do is use the new data to influence the historical calculations, and is that what you're talking about, Doug?

MR. GREGORY: I don't recall the exact thing, and I think it was the catch per unit effort from headboats was imputed to some aspect of private anglers, and, if that was in 72, then, you know, we should look at it again.

CHAIRMAN NANCE: Doug, I think you're right, and I think what Katie is saying is Lisa took that into account, and that's why 72 is going to be presented also, with both the MRIP-FES data and the new data from Florida. Katie.

DR. SIEGFRIED: Yes, with the historical catches reconstructed the same way they were before, and the headboat landings did have an effect on those ratios, and so that is corrected, and that's why we're showing you the old model today.

MR. GREGORY: Thank you very much.

CHAIRMAN NANCE: Any other questions? Paul, please.

DR. MICKLE: Thank you. I'm surprised that it's such a -- I guess there's a lot of headboats in that area, and I just would think there would be a larger change, with the addition, and I just want to say that this is very easy to do. I'm a victim of it, and, in my case, it was a spatial omission, by accident, analyzing things, and it got to a point, with some of our service support, for another line office of NOAA, with NCEI, under NESDIS, and we actually built-in internal safeguards now, to try to make sure that, as data changes hands, and we come up with a new idea, and do a different analysis, or things like that, or new data comes in, that things aren't bumped-out by mistake, whether it be handling or analysis, or sometimes your code will just do it, and I don't really understand it, but it's just a really easy thing to actually do, and you really -- Unless you build-in fail safes, you don't catch it, really, a lot of the times.

My question is are you all looking into stuff like that, where this maybe was spatial data, broken up, it seems, with the headboat data, with the zones, and are you building-in types of internal policies, or checks and balances to appropriate this, so it doesn't happen in the future? Thank you.

DR. SIEGFRIED: Yes, Paul, and I appreciate that comment. I think everybody who has coded has made mistakes in the past, and it's unfortunate, but I appreciate that comment. Yes, actually. With the realignment, the Center is focusing a lot on automation and quality control and error checking in all of our code. We're trying to get, and Shannon is there too, but we're trying to get more eyes on code, and we're trying to get these error checks and automations moving from SASS code to R code or something where everybody is using the same code, and we can have more than one analyst looking at each data product.

What we had to do, for this particular error, and I actually looked at the code with the new analyst, and we had to run it and then produce a table and eyeball what was going on with the SASS code, but, with the R code, he caught it right away, and so we are working towards making sure that this doesn't happen, and I think the reason we found it is because that's what we're doing at the Center right now.

CHAIRMAN NANCE: Thank you. Paul, a follow-up question?

DR. MICKLE: Thank you, and I appreciate that. I have to do a plug, I guess, just to brag about NESDIS and NCEI. You know, they do petabytes worth of data, handling, archiving, storing, and it's really amazing, and so I always encourage the line offices just to reach out and have a conversation, and get out of your box a little bit and just have a friendly conversation, and that's all they do, is data. They do nothing else on this earth, and it's pretty amazing, and so those resources are there, and I encourage folks to utilize them, because I have really learned a lot, since working with them, and so I just wanted to say that.

CHAIRMAN NANCE: Thank you, Paul. Ryan.

MR. RINDONE: Thank you, Mr. Chair. Just to a comment that Dr. Mickle made about thinking about, or wondering about why those landings weren't more significant, that part of gag's range is not where a lot of the biomass is really located, and most of it is in west, central, and southwest Florida, and those regions, and basically from the Big Bend further on south.

They do catch them up there, and they occasionally catch them in Texas, but very small numbers of fish, and it wouldn't be like what we would expect from headboat fleets leaving out of west central Florida, and so the landings that Dr. Siegfried showed are only, really, marginally different, you know a percent-and-a-half to -- I think it was 0.6 to 1.5 percent, and that would seem expected, based on our knowledge of distributions and landings.

CHAIRMAN NANCE: Thank you, Ryan. Seeing no other questions, Katie, thank you. I appreciate that presentation, and we'll go ahead and turn the time over to Dr. Ailloud. Lisa, if you're ready, we'll go ahead and look at this presentation. I appreciate your efforts in providing this for us.

DR. LISA AILLOUD: Good morning, everyone. Thank you, Katie, for the introduction on the headboat issue. I will dive into this a little bit deeper, and so, first off, I do want to apologize for the last submission of this presentation, and this error caught me a little bit off-guard, and I had to make sure that I reran models and diagnostics, so I can show you accurate results.

That being said, you will see that most of the information that is in the report that was submitted a couple of weeks back still stands, with a few changes to the rebuilding timelines, like Katie alluded to, but, other than that, in terms of data fits, you will see some very similar patterns, and so that's reassuring.

I am going to go over just a reminder of what the council request

exactly was for this run, and I'm going to detail what exact changes were made to SEDAR 72 to address this request, and then I'll go over model results, diagnostics, and projections showing both the SEDAR 72 and the SRFS run side-by-side, so you can see the differences that appear.

There was a council request put forth to substitute the Florida private boat landings and discard time series in the SEDAR 72 assessment from the FES units to the SRFS units, and part of the TORs was also to detail the methodology used to approach this, the results, diagnostics, and production results.

What were the changes to the data inputs? As you all are aware, we have a State Reef Fish Survey that is running concurrently with MRIP, and it started in May of 2015, and so I've put, on the upper-right corner there, the annual estimates of landings coming from MRIP and SRFS for those four years, and you can see that there is quite a difference in magnitude, and thus the request to see how this substitution to SEDAR 72 affects the rebuild.

What time series did I use? Well, there was a time series provided to the stock assessment team, which is in SRFS units, and it's an exercise where a single calibration factor was produced, using those data points from those four years, to convert the MRIP time series in each year into a SRFS currency, and so you have, essentially, a single ratio, a single factor, that is applied to the full time series, and so you can think of it as a scaling-down of about one-half, and so it's not affecting the trend of MRIP, but it does affect the magnitude.

I show, on the right-hand side, the private plus shore fleet that is structured in the Stock Synthesis model, and you can see in red is the time series using the MRIP data for Florida private, and then, when we substitute that portion with SRFS, and we use the SRFS variance estimates, we obtain that teal, teal blue, color on the bottom, and so the top is the catch, and the bottom is discards, and you can see that, really, it kind of scales everything down, by about half.

I do want to point out that, in the SS model, the recreational and private shore fleet includes more than just Florida private, and it includes private and shore modes from Florida, Alabama, Mississippi, Louisiana, and Texas. That being said, if you look in any one year, the Florida private portion is usually around 95 percent of the total catches for that year for that fleet, and so, in essence, most of it had to be recalibrated to SRFS, but whatever was remaining stayed in MRIP currency, because we don't have a way to convert that at this stage.

Now, any adjustments that were made during SEDAR 72 and decided by the panel at the time were applied here, and that includes the discussions on the 1983, a very large peak in the MRIP private landings that was observed and that was seen as an outlier and very sensitive to one of the intercept values in the intercept surveys for that year, and it would adjust it downward, at the time, for SEDAR 72, using the -- Replacing the value from 1983 with the geometric mean from 1981, 1982, 1984, and 1985, and so I did the exact same exercise here for the SRFS data and adjusted that number down.

Because we're using a single calibration factor through the whole time series, that peak was apparent, right, and so I did need to lower it down the same way we had done in the past, and then one more change that was done is to adopt those CVs provided by the SRFS time series and use those in place of the 0.2 that we were using prior and replace those in the time series of catches and of discards, and we also had CVs for discards coming from SRFS.

Now, this is what, I believe, Doug just alluded to. There is, also, an impact, and I will come back to it to, with headboat, and so there's kind of a two-step --

MR. RINDONE: Lisa, can you hear me? We lost the last about twenty or thirty seconds of -- As soon as you changed slides, and so, if you want to start this one over. The slide that's up right now, if you want to start that slide over.

DR. AILLOUD: The last adjustment that had to be done for having the SRFS time series replaced is to adjust the historical time series of recreational landings, which is 1963 to 1980. If you recall, that one is calibrated against a mean CPUE from the recreational, the total recreational CPUE, from 1981 to 1985, and, given that we're adjusting the private fleet data during that time, it is affecting the CPUE calculation, and so I had to recalculate the CPUE for that time, of course making some assumptions about the relationship between the MRIP and the SRFS CPUE, given that there was no SRFS effort estimates for that time, and there was no survey operating, but we could make assumptions and then recalculate the CPUE and scale down those historical estimates to reflect that change.

Then, finally, this allows us to get a total recreational catch estimate for each year for 1963 to 1980, and we have to take the extra step to divide it up between the modes, and this was done the same way it was done in SEDAR 72, which is to look at the apportionment by mode from 1981 to 2019, take the average, and

then use those ratios to divide up between private, headboat, and charter, for that chunk of time, from 1963 to 1980.

You can see that I have boxed it in yellow here. The historical time series, what it does is it scales down the influence of the private catches on that historical time series and scales up, slightly, the influence of the charter boat and headboat relative to SEDAR 72.

Moving on to the headboat issue, like Katie pointed out, those modifications were pretty minor, and the error accounted for about less than a percent, mostly less than a percent, change in the total recreational catch time series, through time, and you can see here exactly what it does to the headboat time series, and so the original time series is shown in red, and you see that, in a few years, if you add the data that was dropped, you get the blue line, and those are the corrected time series.

You have your landings, on the top-left, for headboat, and your discards on the top-right, and so, for discards, only the time series from 1986 to 2007 was affected, because they use a different methodology beyond that, and so it's a pretty minimal impact there as well. That being said, like I mentioned, because we are adjusting headboat, and because, in the historical time period, we use the ratio of headboats to charter boats to private to assign -- To apportion the historical catches by mode, it did change slightly the ratios used in the historical time series to apportion the catches.

I show the results here, and you see a larger change in the headboat, where the new time series assigns slightly higher catches to headboats prior to 1980, and, if you look at charter and private, it's really hard to see. Since the magnitude of catch is larger, the impact is actually much smaller, and so there is a slight difference, but it's not a big change.

What I want to do now is just show you, step-by-step, differences between the SEDAR 72 and the SRFS run, in terms of what the corrections with the headboat did, and so, here on the left, in the panels, you can see the changes in the data input and how -- What the difference in magnitude of change is for each of these models.

What did it do to the actual model when I replaced the corrections for the headboats? I did have issues with the private and shore fleet selectivity parameters. A couple of the parameters from the double normal shape started bounding, hitting the bounds, and they were -- They were parameters that already had a high level of

uncertainty in the SEDAR 72 model, and it just pushed them towards that bound, and we don't want a model that has any parameters really bounding in a base model, and so I investigated what those selectivity parameters were doing, if the bounding made a difference, meaning, if I push it off the -- Just going to one, as I push it off of one, as it was in SEDAR 72, does it really affect the results, or is it just kind of moving around aimlessly, because there's not much to anchor it down, and the answer was they were not that influential, but I did not want any bounding parameters, and so the decision was to fix those two parameters in the model so that it wouldn't cause any further issues.

That is really the only major modeling issue that I ran into, and, in terms of changes to the process, the forecasting process, given that there were corrections made to headboats, it did affect the interim catches that were input in the forecast, and so I did have to update those, and we see the numbers listed here, and so they are slightly higher, given the corrections in the headboat, and the other change I had to make is that the 2021 red tide value that we put in our projections -- If you recall, that value is actually scaled to the magnitude of the 2005 estimated red tide in those models.

I just had to rescale it to this new estimate of 2005 red tide, which was slightly different, but, as you can see, those numbers are really close, and so SEDAR 72 moved it from 0.152 to 0.147, and so fairly minimal.

This is just to illustrate the bounding issue that I was talking about, and you can see here the ascending limb wanting to go to one, and I did check, and it had no impact on the actual fit to the age and length composition, and the reason is that section of the selectivity curve falls where the discards would be.

However, we do not have any size information on discards for the private and shore fleet in the model. We don't have that kind of data collected, and so it doesn't have a lot of information. It relies on the ratio of discarded amounts to landed amounts to figure out where that limb should go, and it does have a little bit of play with the retention curves in the later years of the model, where we have management actions coming in that restrict the timeframe of the recreational season.

It's a difficult parameter for the model to estimate properly, and, as you can see, just moving it down, or fixing it, to what it was in SEDAR 72 just allows the model not to be so unstable and without changing the actual fit to the important data stream.

In terms of fits -- Sorry that it's a little small, but I wanted to make sure that you kind of got the big picture all in one slide, and these are all the fits to the indices, and so you have two lines here, and you can't really see the difference, because they overlap. The lines are for the original model, before the headboat correction, and the new model after the headboat correction, and so the good news is correcting the headboat did not affect our fit to the indices.

Then the same pictures here, but we're looking at the trends in recruitment, in exploitation rate, and in spawning stock biomass combined, and you can see here, again, the overlaps between the old model and the corrected model are really close, and you can see some small differences. For example, the magnitude of the 2018 red tide shifts the exploitation rate for 2018 up a bit, or down a bit, sorry, with the corrected data, but we're still within the very large uncertainty band, and so it's not a significant difference.

CHAIRMAN NANCE: Lisa, let's go ahead and see if there's any questions on data inputs. Any questions from the SSC on the -- Okay. You did a great job on explaining those changes, and I appreciate that. It doesn't look like there is any questions, and so let's go ahead and go to the model results.

DR. AILLOUD: Okay. Thank you. Model results, you all have the report, and I didn't want to make this presentation too long, and so I will get to the bottom line, which is, on one end, I just presented that the headboat corrections had a minimal impact on the model results and model fits, and, on the other, which you've seen in the report, is that, in the end, the SRFS run also has nearly identical fits to the data as in SEDAR 72. By that, I mean fits to the indices, to length composition, and age composition, and all of that is detailed in the report, and I will be working on updating those reports to reflect the headboat correction, so we have the correct one for our record, but a lot of those comparisons with the SEDAR 33 update model still hold. Now, I will go over what differs, and so next slide, please.

CHAIRMAN NANCE: Lisa, Roy has a question.

DR. CRABTREE: Lisa, in the fit to the recreational catch estimates, are you using the CVs on that, or are you using a fixed CV?

DR. AILLOUD: The private fleet is now using a CV from the SRFS dataset, but, everything else, I didn't alter the CVs, and so there was a fixed CV on headboat, and then -- I would have to check, but

I believe charter was a combination of fixed back in time and --

DR. CRABTREE: I am mostly interested in the private.

DR. AILLOUD: So the private CVs changed, because we were able to use the SRFS CVs. However, those were fairly large, and so they still allowed a fair amount of movement around the catches and discards, in the same way that we had done in SEDAR 72, which we had allowed fairly large CV around.

DR. CRABTREE: So the SRFS CVs aren't significantly tighter than the --

DR. AILLOUD: No.

DR. CRABTREE: Okay.

DR. AILLOUD: In the recent time, a little bit, in the last few years, but there are some years where they are even larger.

DR. CRABTREE: Okay. Thank you.

CHAIRMAN NANCE: Okay, Lisa. Go ahead. Thank you.

DR. AILLOUD: Now I will go over what has changed, and what has changed is looking at the resulting time series of estimates of the quantities that we're interested in, and so the spawning stock biomass on the left-hand side, the recruitment on the top-right, and then the recruitment, in terms of deviations.

What did happen is a scaling-down of the population, and so, if you're using the SRFS dataset, you're essentially scaling down the virgin population by a little less than half, compared to the SEDAR 72 run. Now, interestingly, the trend, and even the magnitude of the spawning stock biomass, starting where the data series enters in the 1960s, is very close between the two runs. There is some slight differences, with maybe a slightly larger drop in SEDAR 72 in 2005, and maybe a slightly larger drop in 2014 coming from the SRFS run, but, essentially, the trend matches really well, and the depletion level in the terminal year is very close between the two assessments, and I think we're around -- The total spawning stock biomass is around 2 percent of virgin in the terminal year, regardless of the datasets used.

As expected, the recruits also are scaled by about half, and, using the SRFS data, the virgin level of recruitment is about half of that that it was in SEDAR, and so the whole -- The time series of recruits is also a magnitude lower, and then, if we look at the

actual recruitment deviations, those are -- The patterns are actually quite similar, and there are some slight differences post-2010, where the SRFS run is seeing some recruitment deviations that are closer to zero, and actually overlap with zero in some years, and so average recruitment, versus, in SEDAR, you had some more negative values for the recruitment deviation in 2011 through 2013.

As I mentioned, the depletion is similar, if you look at this graph using fraction unfished for total spawning stock biomass. The 2014 red tide is a little more pronounced in the SRFS run, and you can see that reflected in the graph for the exploitation rate on the right-hand side.

I dug a little bit more into this 2014 red tide, and I think what it's -- What seems to be happening is, if you recall, there were some time blocks at the end of the model for the recreational fleets, and there were three time blocks to define the changes in the length of the fishing season for the recreational fleet, and the fishing season was most restrictive in the 2011 to 2012 time block. In 2013, those restrictions were lifted a little bit, and so it's a little bit of a longer season from 2013 to 2015, and then, in I believe it's 2016 or 2017, the recreational fishing season expanded yet again, to be much longer in time.

What you would expect is, essentially, that the amount of fish discarded above the size limit would be highest when the season is most restrictive and then gradually lessen, and this is what that retention asymptote shows, on the top two panels there. You can pay attention simply to the asymptote of those curves, and so, if they are at one for a certain time block, it's saying that 100 percent of the fish from that fleet, from the private fleet, are being retained, if they're above the size limit, and, if it goes below that, it says that some of those size limits -- Fish that are above the size limit are actually having to be discarded, because they are fishing outside of the legal fishing season.

Those are retention parameters that, you know, co-occur with a couple of red tides. We have the 2014 red tide and the 2018 red tide, and so it's not -- It's difficult for the model to estimate those, and it was already a challenge in SEDAR 72, and it's still a challenge with the SRFS run, but the SRFS run does seem to be able to estimate the 2013 time block to have an asymptote a little bit below one, which we would expect, and what that, in turn, does is that it assigns a little more fish kill to the 2014 red tide, compared to SEDAR 72, where it wasn't able to define the height of that asymptote for the private fleet.

There's a bit of a tradeoff here, but, overall, it doesn't affect the total exploitation rate so much as just partitioning those dead fish towards a fleet versus a kill from the red tide.

Moving on to diagnostics, these are the diagnostics. Again, I have -- Sorry. I think I switched those, and I meant to have SEDAR on the left and SRFS on the right, and I don't mean to make you struggle, and so those show -- The bottom line is the jitters are fine. Those models are fairly -- They are well-behaved, and there is no alternative model with a lower negative loglikelihood, and there is not much movement, actually, as you start to play around with initial values and rerun the model, and so this is for 100 runs, and you can just focus on the final plot of each of those, which is total likelihood. You see that there are a few runs that converge to a different solution, but it was a worse solution than the base model run.

In terms of the retrospective analysis, both models, SEDAR 72 and the SRFS run had very well-behaved retrospective patterns, and what I mean by that is there is no directionality or large gradual changes, as new data is entered into the equation, and so nothing to signal here. We were happy with SEDAR 72, and we're still happy with the SRFS run. This is the spawning stock biomass. Now you have the recruits, and you see a similar pattern. There's some movement in the end here, but nothing strong or directional, and one more slide, and that is the exploitation rates.

This diagnostic here is the likelihood profile, and we have SEDAR, again, on the left-hand side, and SRFS on the right. What I did here is blow it up, so that, on the top, you can see the shape of that total likelihood definition around the maximum likelihood estimate of R0, which is around 9.5 for SEDAR and 9.1, I believe, for SRFS, and then, on the bottom panel, I zoomed-in, just so you can kind of see what is going on and what each dataset is telling you about R0.

I put a little dotted line as the likelihood unit, which is anything below that is not significantly different from one another, and the main message here is that those two models seem to have a fairly similar profile with -- Something we observed back in SEDAR 72 was a level of disagreement between the length data and the age data, where the length data tends to pull toward the lower estimate of R0, versus the age data tends to favor a higher estimate of R0, and all the other datasets are somewhere in the middle.

This disagreement between length and age is a little bit exacerbated with the SRFS run, and you see those orange and kind

of greenish-yellow lines pulling farther apart, but, again, the other datasets are fairly close to each other and in agreement to the maximum likelihood estimate, and so that data conflict is still there, and, unsurprisingly, we haven't touched the length or age data, but, overall, nothing too alarming coming out of this SRFS run.

In conclusion, for the model comparison of SEDAR 72 and the SRFS run request, the use of the SRFS time series scales down the population size and recruitment estimates by about half, which is similar to the ratio used for calibration of the private Florida landings, but it does not seem to change the actual trajectory of the stock all that much, or the terminal year, the SSB over SSB virgin ratio.

The diagnostics all look good, and, like I mentioned, the only real difference that I could detect was a slight increase level of disagreement in the likelihood profile at R0 for the SRFS run, but, all in all, very similar models.

CHAIRMAN NANCE: Let's go ahead, and I'm going to see if there's any questions on the model itself. We've talked about the data, and we've talked about the models. Any questions the SSC at this point of the presentation? I think it was an excellent job in comparison of the SEDAR 72 model and this new model, and so it was very well done. Doug Gregory, please.

MR. GREGORY: Thank you, Mr. Chair. I'm always amazed at how you all can balance so many analyses and get it all done. Can we go back to Slide 17? This is tangential, but it influences my way of thinking, or interpreting, what we're going to talk about next.

You know, there's been some questions, by some people, as to why the last stock assessment, 33, was so much different than this one and why the population was healthy then, and it's in such dire straits now, and so I've been bouncing back and forth and looking at that and just trying to interpret the information.

If we look at the spawning stock biomass trend here, we see that big decline in 2006, which, coincidentally, was right after the big red tide event, which I'm sure was not the first red tide we've had in the last thirty or forty years, but it was certainly big enough to get everybody's attention, and so it appears that that red tide, or something around that time period, dramatically reduced the spawning stock biomass.

Now, looking over at the recruitment graph, surprisingly, recruitment wasn't really affected by that red tide. Recruitment

was high for gag throughout the 1990s and 2000s. Recruitment was substantially reduced in 2011, which, in my mind, is coincidentally the year after the oil spill, and so it's possible the oil spill affected recruitment of a stock that was already at a low level, and we see, if we go back to the spawning stock biomass graph, we see, after 2011, the stock is even at a lower level, and, given all of the variability in the recruitment -- I did compare the nine years prior to 2011 and then 2011 to 2019, and the prior years were twice as high in recruitment, more than twice as high. If you look at the SRFS data, it was four times higher, if you look at the SEDAR 72 data, and they're statistically different.

It seems, to me, that something affected recruitment in 2011, and then maybe it was the subsequent red tides that have kind of kept the population depressed, and that's the trajectory that I see as to what's been going on with the population, and maybe the assessments are just now catching up with all this.

The other thing that I want to point out, in SEDAR 72, we made a decision to include male biomass in the assessment, whereas, previously, only female biomass was included, and, in 2014 and previously, that made a dramatic difference in the conclusion of the stock status. In other words, with female biomass only, stocks were healthy, and that was our conclusion in SEDAR 33. When you combine males, it is not healthy.

The issue of sex ratios is real and irrefutable, and that was brought to the attention of the stock assessment analysts back in the 1990s, mid-1990s or late 1990s, and, at the time, their response was, well, that's fine and good, but we don't see it in the recruitment, and I want to point that out again. All throughout the 1990s, and 2000s, even though the sex ratio was low, and dramatically low, recruitment was not affected by that, and so that makes me wonder what's the appropriate way to go with that, because we don't see the evidence of lower recruitment when we had small sex ratios.

We do see it now, but it could be due to these other factors of the oil spill and subsequent red tides, rather than the sex ratios, and so I just wanted to point out those two things. Thank you very much.

CHAIRMAN NANCE: Thank you, Doug. Any other comments or questions? It doesn't appear so, and so let's go on to the projections.

DR. AILLOUD: Thank you, and thank you, Doug, for those comments. We did have some discussions about the oil spill during the development of SEDAR 72, and we just didn't have quite enough

information, but I think you're right that there is datasets now for age and length that are showing impacts of certain events that are detrimental that we didn't have those datasets as clear in the 1990s, and so we are learning more, it appears.

Moving on to projections, I just want to start off with reference points, because there's a bit of a difference here in what I am presenting versus what you have in your report, and that's because, when I received the scope of work for the SRFS run, there was mention to include Fmax as a comparison to FSPR 30. However, we've had lengthy discussions about Fmax with the SSC, and the SSC had recommended not to use Fmax for SEDAR 72.

We did have a call with -- The Southeast Center had a call with the SSC Chair and Vice Chair, and there was a request made to also present SPR 40 percent, alongside FSPR 30 percent, and remove Fmax from this presentation, since those discussions had already occurred, and so I will show today the results from both of these FSPRs and also just remind the group of the conversation we had around SPR in I believe last fall, so that it's fresh in everybody's minds.

Again, the issue with SPR -- What is it measuring? It's measuring the fraction by which the F reduces the recruits lifetime reproductive output, and the big issue, like Doug mentioned, is that, if you do use SSB female biomass only to measure this reproductive output, and you have a protogynous hermaphrodite, then your long-term F may result in some relatively low biomass levels of males, which can affect long-term yield, and so we've had this discussion before, and the SSC had decided that, given the uncertainty surrounding the relative contribution of males to the reproductive output, it was safer to use combined SSB to define the spawning stock biomass, and so those are males plus females, where a kilogram of males is equivalent to a kilogram of females inside the assessment model.

The idea was to provide some buffer, to avoid depleting males in a state where we are uncertain, really, of the importance of males to this reproductive output contribution.

Now, when deciding what SPR to use, there is the paper that we've mentioned in the past by Harford et al. that provides a simulation framework that bases its exploration on a couple of factors, and one is the differences between gonochoristic species and hermaphroditic stocks, comparing the two and also adding to the simulation the uncertainty that we usually have surrounding steepness and determining -- Giving some level of guidance as to which level of SPR would be -- Would give you the highest

probability of achieving this long-term MSY that we seek.

Now I'm just going to summarize the results of the Harford paper, and it is in the background documents, but I thought that it might be nice to just show it in one slide, and so what are the results from this in the simulation framework, and I do have to mention that this simulation uses SSB females as the measure for the SPR, but it does paint the picture of what happens the more you know about steepness and the way you change the level of this SPR.

The graph on the right-hand side shows a summary of the results. What you have here is, on the top row, a situation where you're very certain about -- You're certain and you're correct about the steepness level for your stock, and the middle ground, the middle panel, is where you are less certain about steepness, and so you might be -- You're making an assumption, but you might be off by a bit, and then the last one is you really don't know what steepness is for that stock, and it really could be anything.

Then the panels, the columns, the second and third ones, show the results of the simulation in terms of which FSPR achieves -- Gets closer to, you know, a B over BMSY of one or a C over CMSY of one, and so what you bring your eye to is that X mark, where it's been 0.8 and 1.2, and so you're right around one, and which one of the SPRs maximizes your chance of reaching that.

The conclusion of the paper is that, for hermaphroditic stocks, it is an FSPR 50 percent in the middle ground, where you were less certain about the steepness level, and that shifts around a little bit to an FSPR 40 percent, if you're really certain about your steepness and that that steepness is around 0.8, and then, if you have a lot of uncertainty, then it's a more precautionary SPR of 60 percent. That is the rundown of the guidance from that paper.

Now let me go through the projection results, and then that will be the last portion of the presentation here. Again, we have the same projection settings as I had shown for SEDAR 72, and so your selectivity and retention are set to the levels from 2019, and that was because there is a minimum size limit change in the commercial fishery in the last year, and so that's what we're projecting forward.

The recruitment is pulled directly from the Beverton and Holt stock-recruitment relationship, which again assumes a steepness of 0.85 and a sigma R of 0.6. The interim landings are shown here for each of the fleets, and I was able to update those compared to the projections that I showed either in the fall or winter, and so now we actually do have final estimates for 2020 and 2021.

Some of these 2021 estimates were called provisional, but I talked to the analyst that said they're very close, and there are going to be very minor changes in the future to those numbers, and then, in 2022, obviously, there is no estimates yet, but I used the three-year average of landings from 2019 to 2021, as recommended by the SSC.

You see, in blue, that the headboat values are slightly changed, to reflect the correction, and you see, in red, the difference between the interim landings from FES versus the SRFS run, and, finally, the allocation ratio, again, is the 39/61 from Amendment 30B, and so that is unchanged from when it was calculated back when we were using the CHTS units, and then the red tide value, which is scaled to the 2005 estimates, and remember that value is informed by the Ecosim model, and so externally to SS, but there is a 2021 red tide introduced into the projections, and the value for that red tide is slightly different between the SRFS run and the SEDAR run, and SEDAR is shown in red.

CHAIRMAN NANCE: Roy, please.

DR. CRABTREE: Can you back up to the previous? So the allocation ratio, the 39 -- I guess that's 39 commercial and 61 rec, and is that what is in the regulations, or in the FMP, for the allocation?

DR. AILLOUD: Yes, that is the current allocation.

DR. CRABTREE: Okay, and so that's based on MRIP historical landings?

MR. RINDONE: That's from 1986 to 2005.

DR. CRABTREE: But what currency?

MR. RINDONE: That was from 30B, which would have been 2014, and so that would have been CHTS.

DR. CRABTREE: All right, and so it's not -- The allocation ratio is not in the same currency as the assessment we're looking at, and I know we've had this issue before, but aren't we going to end up needing to do the projections over again, using whatever change to the allocation ratio, because, presumably, if the council follows what they've done with red grouper -- If they stick with the same years, the landings are going to change, and so those percentages are going to change, and is that correct?

MR. RINDONE: If you apply the SRFS data to those historical years

for 1986 to 2005, you will get a slightly different allocation scenario, and Lisa has the data to be able to show you what that looks like.

DR. CRABTREE: Okay, but, I mean, we very well might end up needing to rerun projections, based on a different ratio.

MR. RINDONE: Right. We may.

DR. CRABTREE: Okay.

MR. RINDONE: Then, and Dr. Frazer can comment on this more, but, at its --

DR. CRABTREE: Well, I know that no one knows now, but I'm just making sure it's clear in my mind that that may change and have to be revisited.

MR. RINDONE: Sure, and you guys can -- You can obviously make recommendations based on different settings too, and so you could say that, under these scenarios, OFLs and ABCs are appropriately calculated, and decisions about allocation are, obviously, the council's prerogative, and so, depending on what scenario the council decides to go with, this is the appropriate value that corresponds to that, and you've done that in the past.

DR. CRABTREE: Right, and I would leave that to the council, to tell us what ratios they want to evaluate, and then the Center can redo the projections based on those, but I assume that will be coming.

CHAIRMAN NANCE: Thanks, Roy. Tom.

DR. FRAZER: I think, in the short-term -- I mean, the council discussion indicated that they don't want to mess with the allocation ratios.

CHAIRMAN NANCE: Thank you, Tom. Luiz, please.

DR. BARBIERI: Right, and so I was going to say that, Tom, because that was the council's explicit statement, at the last meeting, but there's also the issue that we're going to actually have to develop a rebuilding plan.

CHAIRMAN NANCE: Yes.

DR. BARBIERI: So that formal rebuilding plan will take a little longer to develop, and that might be able to incorporate all the

allocation decisions that the council eventually makes, because, right now, we are going with an interim rule until this implementation of this rebuilding plan.

DR. FRAZER: I think that's right. I mean, moving forward, you might play with those, but, in the short-term, I think the ratio is fixed.

CHAIRMAN NANCE: Okay. Thank you. Lisa, please.

DR. AILLOUD: Thank you, Ryan, for clarifying, and the recalculation of that ratio was using the same methodology as was used in the Amendment 30B, but using SRFS data, and that brings the ratio to about 35/65, and so it is fairly close. Obviously, with FES, that would be a different picture, which shifting much more towards the recreational sector.

This is the summary table, and you have your typical reference points here shown, and I show here -- On the left-hand side, you have the SEDAR 72 results, on the right-hand side, the SRFS run, and, for each of those, you have your FSPR 30 percent projections against your FSPR 40, and so you can see the differences in the FMSY proxy between the two, and you can also see the differences in -- The stock status is unchanged, and it is overfished and overfishing occurring in all scenarios. However, there are differences in how long it takes to rebuild with an F of zero, and in terms of how rebuilt the stock is relative to virgin conditions in the first year of rebuild, depending on the SPR chosen.

CHAIRMAN NANCE: Okay. Thanks. Just for my own brain here, the SEDAR 72 data that are presented are the updated with the change in headboats, correct?

DR. AILLOUD: That's correct.

CHAIRMAN NANCE: Okay, and so these are -- While it may have been a little different with the last SEDAR 72 that we looked at, I wanted to make sure that everyone realizes that, when we say SEDAR 72 here, these are the values with the updates, and then it's compared against the SRFS run, which are the values that we just were given this last time.

DR. AILLOUD: With the headboat corrections, yes.

CHAIRMAN NANCE: Thank you very much. John.

MR. MARESKA: I was just curious if, during these model runs, did you allow the model to estimate steepness on its own, and was there

any difference between the SRFS run and the SEDAR 72 run?

DR. AILLOUD: No, I did not attempt that. It wasn't attempted during SEDAR 72, and it wasn't in the TORs for this operational, and so I don't have an answer for that.

CHAIRMAN NANCE: Mike.

DR. ALLEN: Lisa, I had a question about this. On this table, for the R0 values to be so much higher for the SEDAR 72 than the SRFS run, but the projections, at the end of the time series, to end up in the same place, it would seem to me that the stock would have to be more productive in the SRFS run, to start with a lower biomass and end up in the same place, and the steepness was set at the same for both runs, and so I'm curious, and is there anything in this model that's changing the productivity of the stock between the runs, and, if so, why not?

DR. AILLOUD: The level of the spawning stock biomass in the terminal year of the assessment is very close between the two runs, and so, if you apply a Beverton-Holt, using the same steepness value -- If you look at the recruitment differences -- The problem is the level of recruitment is very low now, and the ratio between the recruitment of the SRFS run and the SEDAR 72 run is -- I have to pull up the other table, but there's a magnitude difference, but everything is at a low level, right, because double a low level is still pretty low, but the biomass in the final year is really close between the two runs.

DR. ALLEN: Right. I see that, and I understand -- That makes sense to me, but for -- I mean, typically, if R0 is higher, then, to produce the same kind of trajectory -- Excuse me. If R0 is lower, to produce the same trajectory, you would need a higher productivity, a higher steepness, or something else, like size at maturity or something else changing, and maybe I'm not thinking about it right, but, when I saw the difference in R0 between the two runs, the SEDAR and the SRFS run, I thought that that -- To end up in the same place, it should be a difference in productivity, with a higher productivity in the SRFS run.

DR. BARBIERI: Mr. Chairman?

CHAIRMAN NANCE: Yes, Luiz.

DR. BARBIERI: Just an idea here, and, Mike, because, for both assessments, right, you have steepness fixed, and you have M fixed and the same, and so it's very difficult for the model to adjust the productivity, going forward, other than adjusting the R0 in

the virgin biomass, and it did, right, but, really, it's given no additional information that would allow it to adjust the trajectory it's going to follow.

DR. ALLEN: So productivity is not changing between the two, but they end up in the same place, I guess because the SRFS run has lower landings overall through the time series.

DR. BARBIERI: Right, and, to that point, because this is going to be an interesting discussion for us going into the ABC Control Rule, right, and, if they're using a fixed steepness and an SPR proxy, and having fixed M as well that is input into the model, we are basically defining the stock productivity, right?

DR. ALLEN: Yes, and that's basically my question.

DR. BARBIERI: So, when we look at the ABC Control Rule, being able to estimate MSY directly and have a valid estimate of steepness makes a huge difference, and, right now, we are not properly accounting for that in our ABC Control Rule.

CHAIRMAN NANCE: Thank you.

DR. ALLEN: Thank you, Luiz.

CHAIRMAN NANCE: Thank you, Mike. I think, before we get into our next slides and our discussion, which is going to be our main part of this, let's go ahead and take a fifteen-minute break, and we'll come back at 10:40 Eastern Daylight Time. Thank you.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: Okay. We're ready to start, and we appreciate all that are on the call. Let's go ahead, and I think this is kind of a point in the presentation, a point in our discussions, where we need to kind of talk about what we want to do next. Let's talk about the model itself and whether this model run that we've seen, the SRFS run, if there are any issues with what we've seen within this model. Let's open it up for discussion. Roy.

DR. CRABTREE: Well, so we reviewed the basic structure of the model previously and found it acceptable to us for use, and I think that these new runs are -- There are no issues with them that I've seen, and so I think they're acceptable. I guess the issue comes down to how you choose to monitor the fishery going forward, and I believe that the State of Florida, and I think the council, want to use the SRFS State Reef Fish program as the basis for monitoring the fishery, and so, in that case, I think it's appropriate to use

the model runs that use landings based on the SRFS system, which we have now.

I don't think we're getting into judgment calls about FES versus SRFS, and it's really an issue of making sure that the system you're using to monitor it and the reference points and the ABCs and the catch levels are all based on a common currency and that it's done consistently throughout, and I think the Center has done -- I think Lisa did a great job with the presentation, and I think the Center has done a great job with pulling all this together for us.

CHAIRMAN NANCE: Thank you, Roy. Luiz, please.

DR. BARBIERI: Thank you, Mr. Chairman, and I don't disagree with Dr. Crabtree's points. I think that this is all true, but I just wanted to expand a little bit the discussion, because this is something that we are discussing also at a regional level of what the transition team process is trying to achieve and what the actual MRIP program, working with a variety of partners, is trying to achieve, in terms of identifying development of these specialized surveys that would be applied to sample and monitor more of what's considered more specialized fisheries.

The idea here is that this survey was explicitly developed for the purpose of monitoring this sector of the fishery, taking into account that you have a much smaller proportion -- The number of samples, proportional samples, targeting reef fisheries when you look at the overall universal sampling that MRIP has to accomplish between the inshore, nearshore, and offshore species, and then you have differences there, and so, to me, this is kind of like a natural progression that falls in line, for example, with the large pelagics survey that the MRIP program has implemented in the Northeast Atlantic and the Mid-Atlantic regions, basically because it realizes that, for sampling those large pelagic species, a generalized survey, like MRIP, may not be picking up all the signal and doesn't have the appropriate level of coverage, right, of that fishery, and precision then is compromised.

CHAIRMAN NANCE: Thank you, and I think, in this case, we really have, basically, the same modeling approach that we used in SEDAR 72, and we've adjusted the currency that we're looking at here, and the SRFS data allows us to do that, because it's Florida-centric, really, and so I think that's good, and so we have a model that we've looked at, and we talked about that at our meeting in January, I think, where we looked at the SEDAR 72 base model, and all we're doing here is we have now a model comparison, and we have FES data that we've used in what we're calling SEDAR 72, and

then we have the SRFS data, which we're calling the SRFS run, and comparison of those two, but the model really is basically the same entity we've used in the past. Roy.

DR. CRABTREE: Yes, and I didn't see anything that indicated the fits were significantly different between either of the two runs, and so it's more a matter of scaling.

CHAIRMAN NANCE: Yes, and I think the scaling was very apparent in the presentation that was done, and so we're seeing, with landings and things like that, catch, that we're about half of what we were with the FES data. Any other discussion on the model itself? Will, please.

DR. PATTERSON: Thank you, Mr. Chair. Previously, we've had presentations about FES in general, and we've talked about FES in different assessments, those data series, and they've been accepted as BSIA, and so I agree with almost everything that Roy said earlier.

The one difference of opinion that I have is that it seems to me that, by switching to the SRFS, or SRFS run, as the best available science, we're implicitly saying that the SRFS data are best available and FES is not, and so I think we are clearly choosing one data stream versus the other, and, you know, we should -- I think we should make that explicit and not necessarily just implicit.

CHAIRMAN NANCE: Thank you, Will. Ryan, to that point?

MR. RINDONE: Thank you, Mr. Chair. Yes, to Dr. Patterson's point on that, the SSC, this SSC, the Gulf SSC, has never given a blanket assertion that MRIP constitutes BSIA for all stocks. Every stock assessment that you guys have reviewed has been on that single completed stock assessment project and not -- So it's been species-specific. I think that past history of decision-making allows you the flexibility to decide, for certain species, if certain surveys maybe are more appropriate for that species than others without, at the same time, saying something like, oh, well, clearly this one is just, in general, better than this other one. You guys have addressed everything in a very case-by-case manner, and so, whichever direction you decide to go in that decision, that's been your history of decision-making.

CHAIRMAN NANCE: Thank you, Ryan. Roy.

DR. CRABTREE: Well, just, Will, I don't think we need to make a determination, or a statement, about which survey is the best

available science, and I think the presentation we heard at the last meeting about best available science sort of indicated that we're not making those calls based on individual surveys. I'm looking at the context of this assessment model, that's gone through this process and been reviewed and is configured in certain ways.

There are different runs provided, and that's the best available science that we have. Now, if you believe that you're going to monitor using SRFS, then that would be the basis for setting the ABCs and all, but I don't think we want to make a judgment here about which recreational survey is better than the other, and I think that leads us down a rabbit hole that we don't need to go down, and shouldn't.

CHAIRMAN NANCE: Thank you. Luiz, please.

DR. BARBIERI: My only question here is whether NOAA legal counsel -- You know, we need documentation here, from us, as to what those requirements would be, in terms of which run is going to be considered the base run to provide stock status determination and catch advice and whether they need us -- You know, because we already made a determination previously, and whether we need to say not which one is the best, but that this one is consistent with the best available science.

I don't know if that's a requirement, but I remember both Mara and Shep always telling us that this is something that is necessary for the SSC to make a recommendation to that effect, if we consider a base run for stock status determination and catch advice, and is that the case?

DR. CRABTREE: Well, I don't know, and I don't know if there's anyone from GC listening or not, but think about what we're seeing with the assessment and the presentations that we've had. I haven't seen anything presented to me that bears on the issue of which one of these surveys is closer to the real estimate, FES or SRFS. I mean, that's really not what we're talking about here today. I think that where we're going is they want to use the SRFS system to monitor this fishery, and, in that case, I think that's the appropriate base run to use for setting catch level advice, but that's not making a judgement about which survey is the best.

DR. BARBIERI: Mr. Chairman, if I may, this is not really to determine which one is the best, and I don't see it that way, because this is not a question that we are prepared to answer, right, and there is an effort taking place now that the goal is to

eventually address that accuracy and precision of all the different surveys that we have in the Gulf, and that effort is ongoing, but I think, since we made, as an SSC -- I am thinking about process here, you know what's needed in terms of process, because we made a determination before that we need to pick a different base model if this is going to be based -- You know, used for stock status determination and management advice, if we need to say that this is consistent with the best available science.

CHAIRMAN NANCE: Ryan, please.

MR. RINDONE: Thank you, Mr. Chair, and so, Dr. Barbieri, something that you said is exactly the point. When Dr. Lynch came and gave us the presentation about how the SSC should be making its recommendations of BSIA to the agency and to the council and to God and country, if you will, Dr. Lynch had said explicitly that the SSC's recommendation should be described as this completed product, which includes multiple analytical products and different data streams, et cetera, or even multiple models bound together, is consistent with the best scientific information available.

It doesn't reference it as being that one thing is necessarily better than another, that things are taken on a case-by-case basis, and it's based on whatever is available at the time, and so, when you guys are considering what you want to do, it's based on what is available to you at the time, or, in this case, at this meeting, and, for this stock, with the data that have been presented and the analyses completed with this work product, and it means that it is consistent with it. It doesn't mean that something is necessarily inherent better than the other, but that it represents the best product available at the time.

CHAIRMAN NANCE: Roy, to that point?

DR. CRABTREE: Exactly, and so I look at this table, and these numbers are all consistent with the best available science here, and the ABC we gave, based on the FES run, is consistent with the best available science, but our task here to present an ABC that incorporates the SRFS run, and now we have that, and we can give them that. They're all consistent with the best available science, but we're not making a judgment call about which one is the best survey. That's not our job here.

I think we just need to be careful how we say it, and how we word it, and be clear that we're not saying one recreational survey is superior to the other one, because we don't have any basis to make that decision, and that's my only --

CHAIRMAN NANCE: Tom, to that point?

DR. FRAZER: Well, a couple of things, and I just to gain some clarity from Luiz, and so, I mean, we talk about the two different surveys as if they're just completely independent of one another, and they're not, right, and so that's important to keep in mind, but, also, moving forward, you know, there's -- You're thinking about monitoring the fishery, moving forward, using the SRFS data, right, and so we're trying to make our lives as least complicated as possible, and so there are some advantages to, in my mind, looking at the SRFS data and, ultimately, creating a model run, or a series of model runs, that provide the projections in those units, because we're going to monitor in those units, but I just want to make sure that people understand that they're not completely independent of one another.

The assumption is -- Whether we make a decision about which one is best or not, the assumption is that you are having supplemental information that are coming from the state that, in theory, should provide increased precision in your estimates. I haven't seen that yet, but, in theory anyways, that's what I would be thinking, and so there's a number of reasons to consider using the SRFS data, moving forward.

CHAIRMAN NANCE: Luiz, to that point, please?

DR. BARBIERI: To that point, Mr. Chairman, yes, exactly, Dr. Frazer, and I feel that this doesn't really compare the surveys. It's not that, and it's simply a process. You know, it's cumulative in nature, and so, the last time, we actually had a formal motion that was accepted and approved by this committee that declared that the SEDAR 72 base model represents the best scientific information available and is suitable for management.

If now we're going to use a different base run, and this is why I was thinking about the legal consequences of this, that we have to, again, reaffirm that now additional information that we have obtained, that we didn't have the last time, right, that we can use now, and that this information is consistent with the best scientific information available and provides other conveniences that Dr. Frazer and Dr. Crabtree have brought up, in terms of monitoring the fishery and greater precision, et cetera.

CHAIRMAN NANCE: Thank you. Doug.

MR. GREGORY: Thank you, Mr. Chair. I agree with Luiz that -- In his statement that is consistent with the best scientific information available that we concluded, because the two analyses

are so similar. It's not like we have a choice here. What we did last year I think stands pat, and I think what we found, that using the state data with gag -- That it makes no difference in the outcome of the analysis.

Now, if the outcomes were different, we would have something to decide. At this time, I think we should ask, or encourage, the state and National Marine Fisheries Service to use the state data whenever they're analyzing species that are predominantly from State of Florida waters, and what means -- If it's 90 percent, 95 percent, from the state waters, I don't know, but, going forward, we need to look at both runs.

We don't drop one over the other, and, so far, FES has stood its ground, and it's proven itself to be on track with any alternative that we can throw at it, and so I think we've got more important decisions to decide today, like F 30 percent or F 40 percent, males and females, Fmax, and those have a much more dramatic influence on the recommendation of the SSC than this does, and so thank you very much.

CHAIRMAN NANCE: Thank you, Doug. Trevor, please.

MR. MONCRIEF: I'm glad we had the conversation, at least to this point, about the two surveys and the findings and everything else. The one thing I was going to mention is, in my mind, when you look at the whole picture, and you look at, you know, everything that's going to occur after the decision is made, in my mind, you've got a survey here that is strictly for the State of Florida, that covers the species with targeting sampling, and likely will end up being robust to changes that we have, or that are going to be promulgated, on the fishing season.

In my mind, I mean, we're not saying which survey is better, or which one is worse or anything else like that, but we do have this thought process of we're making a decision, and the ramifications after that are that, if we go with the state-derived data, we've got a better, you know, pathway to continue monitoring this fishery, and so that's all I was going to say, is that, you know, it seems like SRFS might be a little bit more robust to the changes, and especially the management changes, we're about to see coming on the stock.

CHAIRMAN NANCE: Thank you, Trevor. Will.

DR. PATTERSON: I was just going to say that I think there seems to be consensus here, except perhaps for myself. You know, I don't see the science as the modeling exercise alone, and it actually

includes the data that go into the model, and the model results here do differ. If you look at the benchmarks, they're not substantially different between the two, and the F current, for example, as a ratio to the overfishing threshold, is a pretty similar, but, when you look at R0 and spawning stock biomass 0, there's quite a bit of difference there.

That's going to have implications for rebuilding timelines and levels, and, in the end, we accepted SEDAR 72 as best available, with the FES landings, and now we're saying -- If the direction holds, which I think it's headed, we would be saying that the SRFS run should be utilized instead, and I don't think it's just as simple as saying that's how it's going to be monitored, because these are the landings estimates, and we're not just monitoring them. We're estimating what the landings are in the fishery.

That would be stating, whether it's by the SSC or by the council or whomever, that SRFS provides more reliable landings estimates for this fishery, and I fully understand what Ryan said earlier about not a blanket acceptance of FES earlier, and, you know, the difference that we see between these two -- It's a little bit due to the headboat issue that was pointed out earlier, but it's mostly due to a change in what the landings data stream is. Again, I don't want to belabor that anymore, but I just feel differently about what we would actually be saying by that.

CHAIRMAN NANCE: Thank you, Will. Your points are well taken, for sure. Any other discussion on this topic? Okay. I think let's go ahead and -- Let's stay on this slide, I think, and I'm having a quandary in my brain here whether we go to projections or whether we talk about FSPR. Ryan, go ahead.

MR. RINDONE: Yes, that. I think that needs to be -- Because, ultimately, you guys are trying to trend towards making a recommendation about what is in fact consistent with BSIA, and what you technically have in front of you right now are four models. You have two that use MRIP, one under 30 percent SPR and one under 40 percent SPR, and two that use SRFS, 30 percent and 40 percent SPR.

They all have a fixed steepness, and they all have medium red tide severity from the Ecosim model input into them, but those are the main differences. Whether you're assuming a historically larger, more productive stock, as is characterized by MRIP, or a smaller, not quite as productive stock, as characterized under SRFS, and so, at this point, considerate of some of the things that Doctors Siegfried and Ailloud mentioned about productivity and hermaphroditic species and references to Bill Harford's work and

that of his colleagues about whether you should have some additional consideration of that FMSY proxy, and so, once you guys get past that, and you narrow down a singular model of those four, then I think you could get to that consistent with BSIA motion.

CHAIRMAN NANCE: Okay. Thank you for that clarity. Let's go ahead and discuss -- So, as Ryan pointed out, we do have four models, in a way. We have SEDAR 72, with both FSPR 30 and FSPR 40, and we have those same within the SRFS runs. Doug, please.

MR. GREGORY: Thank you, Mr. Chair. Going off that, the report itself also includes a number of tables with Fmax, and the presentation does not, and I think that is -- The presentation includes a new analysis with SPR 40, and so the presentation, in that sense, is incomplete, to me, because I think Fmax should still be on the table.

CHAIRMAN NANCE: Last time, and from my recollection, when we met in January, and we talked about moving into males and females combined sexes, and the Center presented a great analysis showing why Fmax had been used previously, that we, as an SSC, took Fmax off the table, because it seemed insistent with where we wanted to go with our analyses, and Fmax was going to produce something that was like an SPR 6, or something like that, if I'm recollecting correctly, and so I'm not sure it's wise to have Fmax on the table, and that's why it wasn't presented.

Now, if there are others, and I will give the option here. If there are others on the SSC, and, Doug, I will include you for sure, and, if there are others that want to see Fmax discussed and back on the table, certainly I would entertain that.

MR. GREGORY: Well, just let me continue my train of thought.

CHAIRMAN NANCE: Go ahead, Doug. Yes.

MR. GREGORY: If you look at the tables in the report, 27, 28, 29, 30, one table for each stock assessment run and for each assumption of proxy of 30 percent or Fmax. When you look at the F 30 percent tables, it shows that the stock itself, spawning stock biomass, was overfished since the 1970s. If you look at the Fmax tables, it shows that it didn't become overfished until after 2005. Coincidentally, the big red tide.

I just find it hard to believe, and I understand what you're saying, and I understand why we made the decision we made, and maybe we should talk about that, because now we're being -- We're facing a similar situation between F 30 and F 40, and we're kind

of being pushed into F 40, it seems like, but just look at the analysis. Look at the data coming out of the model.

It doesn't make sense, to me, that overfishing -- That the stock has been overfished since the 1970s and that management had no substantial impact on that for all these years. That just does not make sense, and that's the only reason that I bring Fmax up, because the results of modeling F 30 percent just does not make sense to me. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Katie.

DR. SIEGFRIED: Thank you, Mr. Chair. I just wanted to address the comment about the presentation and the concern. I mean, as Doug stated, the Fmax projections are in the report. However, there still needs to be the understanding that those aren't with the updated headboat data, and, when we met with council staff and the SSC Vice Chair, and I think, Jim, you weren't able to attend, but you were briefed about what we discussed, but that F 40 was looked at because of the fact that now both of these runs had a Tmin of ten, which is basically shutting down the fishery, and so we wanted to reconsider F 40, which the Science Center presented two SSC meetings ago.

It's not like it's coming out of nowhere, but there is no physical way for Lisa to have done all of that in the last week, and I don't mean to be defensive, but all of that is there for you to discuss, except for the headboat correction for Fmax, and we were actually pretty confused about why Fmax was asked for in the TORs, when it was rejected by the SSC, but she did carry those out anyway, and I just wanted to give some background to the group about the status of the presentation and why we would be bringing FSPR 40 when it wasn't requested in the TORs. Thanks.

CHAIRMAN NANCE: Thank you, Katie, and I was on that call where we talked about SPR 30 and 40, and I wasn't able to make the call where we talked about the headboat issue.

DR. SIEGFRIED: You're right. Sorry about that.

CHAIRMAN NANCE: No, you're fine. You're fine, and we've had so many calls that it's easy to be confused. Ryan.

MR. RINDONE: Thank you, Mr. Chair, and so I was on that call also, and an important -- Probably the most important reason that F 40 percent was being considered though was because, under SRFS, SRFS is estimating that the stock is less productive than it is under MRIP, and, considerate of the fact that gag have simply not been

recruiting well over the last twelve, thirteen, fourteen years, and they don't seem to be rebound from red tide very well, and it just lines up a lot with what Harford et al. had discussed, in multiple publication about this, that, for a species like gag, it might be more appropriate to have a more robust spawning stock biomass, to be able to weather the storm, if you will, of having these multiple red tides.

We seem to get one every few years, and we have no idea how bad they will be in any given year, but, you know, gag don't do a great job of swimming out of them, and they don't seem to have that red-grouper-like response to recruitment that follows a red tide. Red grouper, for whatever reason, seem to recruit very well following red tides, and gag don't, and so, considerate of the lower amount of productivity estimated from the SRFS run and these other things that I mentioned, that was why all of the Harford background material was provided and we had asked that the Center do a run at 40 percent SPR.

CHAIRMAN NANCE: Thank you, Ryan. Katie, just -- You know, I really do appreciate all that the Center has done this past week, and, Lisa, I appreciate all the nights that you spent being able to accomplish that. Doug, please.

MR. GREGORY: Thank you again, and I reinforce what you just said about all the work and what the Center has done, and I'm not trying to detract from that. I see the conundrum we're in, and it's the ten-year rule. The ten-year rule is an arbitrary determination by National Marine Fisheries Service in their standard guidelines. It is not in the Magnuson Act, and here we are being pushed into a direction of management, based on that one arbitrary rule.

It would be nice if we could -- If the council, or the Regional Office, could stand up to those guidelines and say we realize that this is the situation, but it's not productive to close the fishery. Therefore, we have a rebuilding plan. Even though an F of zero, F equals zero, under Fmax, it could be rebuilt in ten years, that's not appropriate. I think we could make an argument that we should be able to manage this fishery reasonably and logically, without being dictated to by an arbitrary ten-year rule. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Shannon, please.

DR. SHANNON CALAY: Thank you, Chair. I wanted to make a couple of clarifications. One, there has repeatedly been a statement that the SRFS run indicates a stock with a different productivity. Because many of the stock-recruitment parameters are fixed,

steepness is fixed, in this case, that's not entirely true, but what is certainly true is that the magnitude of the landings changes substantially, and so the FES run had much higher removals, and, therefore, it starts with a higher SSB0 and R0 to maintain those through the model, to maintain that historical record of removals. It really is more, in this case, a feature of the removals that we're assuming, rather than a change in productivity.

However, you know, if we had started from a benchmark model, and we had investigated the changes in steepness, you might see exactly the effect that Ryan is describing, and so I just wanted to make that clarification, and then the second clarification, or statement, really, that I wanted to make, on the part of the Science Center, is that I am not a lawyer.

Certainly we have investigated, other times, whether we could create rebuilding plans that -- F equals zero assumes no discards, which is clearly not likely to happen, right, and you would have to shut down even the dead discards, and so we have had these conversations with GC, General Counsel, and certainly they are of the opinion that the National Standard Guidelines do dictate that, if you can recover in ten years, you are required to, at F equals zero, and so I don't know. It would be better to discuss that with a lawyer, or a General Counsel representative, and I think SERO has those folks on staff who could address that question.

CHAIRMAN NANCE: Shannon, thank you. Roy, to that point?

DR. CRABTREE: Well, just to -- I want to be clear that this is not about NMFS guidelines. The ten-year provision is in the Magnuson Act, and so it's not something NMFS can change. The issue of how exactly you determine that, okay, that's guidelines, but the ten-year is a requirement of the Magnuson Act.

CHAIRMAN NANCE: Thank you, Roy. Katie, please.

DR. SIEGFRIED: Thank you, Mr. Chair. I appreciate being able to speak on these topics, and I know I'm not on the SSC, and I appreciate Roy's comment there, because I did have conversations with folks at SERO, just this week, about this ten-year rule and how we determine the ten years.

That's something that Lisa will go over in the presentation, and we want to make that explicit, how that was calculated, for you all to take a look at, and then, you know, we also lamented, as colleagues often do, about this ten-year rule, because it's not good for anybody, and it's never a good result, and it's difficult to understand how it works the same like for pollock as it does

for a multi-species fishery like in the Southeast.

We share your frustrations about that, and we often talk about it, and we've been asked to provide feedback about it at our level of NMFS, and so just so that you know we share those opinions. Hopefully we can address those specifications, like Roy just outlined, explicitly with this SSC, because I think that is so important.

Then, to Ryan's point about Harford, I do think it's worth talking more about why we're considering FSPR 40 percent. Like I said earlier, we did bring this up when we presented the base run for SEDAR 72, because we were moving to total biomass, and we wanted to sort of understand the impacts of our proxy choices, and, when we moved from Fmax to F30, we talked about this before, and so, you know, Lisa already showed you some of those slides, but, you know, we're prepared to talk in more detail about what the assessment and data would support, given the Harford simulations. It's not just a matter of productivity, and it's a matter of what we assume for this hermaphroditic stock and what we think our data are telling us. Thank you.

CHAIRMAN NANCE: Thank you, Katie. Harry, please.

MR. BLANCHET: A lot of what I would comment on, Shannon already pointed out, and so I guess the concern that I have is, in the table that we're looking at right now, where we are right now is we have an SSB over B0 of about two-point-something percent.

The point is that, if you close gag to all fishing, that's all fishing off the west coast of Florida, essentially, because, otherwise, you're not going to be able to achieve that ten-year rebuild, and that seems like a fairly big challenge. I'm struggling with it. Sorry.

CHAIRMAN NANCE: Harry, thank you. Roy.

DR. CRABTREE: Well, I think we ought to set aside the ten years, for the moment, and focus on the reference point. I think we have, in past discussions, and I think the literature and the Science Center have been clear that Fmax is simply not an appropriate reference point, but the issue of what SPR is appropriate -- This is something we've been talking about for at least the last ten to twenty years, and I think, if you look at the information in that paper that was briefly discussed by the Center -- I mean, no one knows exactly what SPR is, the correct one, because we don't really know what MSY is, but it's clear to me that 30 percent is likely to be on the low end of SPR, and probably something in the realm

of 60 percent is getting on the upper end, and so I would say that 40 percent is probably more towards the middle of the range of likely proxies, and 30 percent is probably at the lower end.

Now, ultimately, the council will have to change this, and they will have to make a decision about what the reference point is going to be, because it's in the FMP, and the council has to change the FMP, and so they would have to go through an amendment process and look at a reasonable range of alternative SPRs, and I don't think Fmax is worth evaluating, except it may have to be, as the status quo, because I don't think it's been changed from that, but it does seem to me that 40 percent is worth evaluating.

I think we can weigh-in on that, that we maybe think that's closer to the median distribution, and so it might be more appropriate, but I don't think you can say that 30 percent is obviously wrong, or inappropriate, and I think though it's more aggressive, and it's probably more out on one of the limbs of probability. 40 percent, or even 50 percent, is probably more likely to be closer to what the real number would be, if you could estimate it.

CHAIRMAN NANCE: Thank you, Roy. Luiz, please.

DR. BARBIERI: Thank you, Mr. Chairman, and I agree completely, Roy. I mean, the idea here, when choosing a proxy, right, is try to find something that captures the vulnerability of the stock and the life history attributes, right, and so, in this case, I think we've seen, given the issue with the sex ratio and the mating system that gag exhibits and the susceptibility and vulnerability to red tide events, that going with something like the SPR 40 percent would be appropriate.

Of course, having that confirmation, looking at the Harford paper, helps, because then we see a broader range there, and we see where the mode, or the more likely value, for that proxy would be, but this is not something that is coming out of nowhere. I mean, you may remember that the SSC had this discussion, way back when, when the original SEDAR 33 was presented to the committee, and, at that point, this discussion of going potentially with an SPR 40 percent was already had, because of those vulnerabilities and because, at that time, the erosion of the proportion of males in the population and the vulnerabilities and the life history associated with this mating system.

Basically, it made the committee feel like a more conservative reference point was appropriate, and so I will be in support of something -- Us recommending to the council a change to SPR 40 percent.

CHAIRMAN NANCE: Thank you, Luiz. Any other comments to that point?

MR. GREGORY: Yes, Mr. Chair.

CHAIRMAN NANCE: Doug, please. I'm sorry. I see your hand up now. Thank you.

MR. GREGORY: Just one short thing about the Magnuson Act. The Magnuson Act says that rebuilding should occur in ten years or less, unless environmental conditions, management requirements, blah, blah, blah, dictate otherwise. The F equals zero equivalent to ten years is in the National Standard Guidelines and not the Magnuson Act.

That said, I don't disagree with the logic that Roy and Luiz are putting forward. My only concern is that the result of going to 30 percent SPR, and not even talking about the result of 40 percent, which has not been modeled and presented to us, as far as the spawning stock biomass trajectory, but I find it hard to believe that the spawning stock biomass of gag grouper has been below 50 percent since the mid-1970s. That's just incredible, and that's what we're accepting, going forward, that this population has been overfished since before the Magnuson Act and that Magnuson management hasn't done much of anything to rebuild it. That's been my main concern, and so thank you very much.

CHAIRMAN NANCE: Thank you, Doug. Certainly uncertainty has been pointed out with all of these estimates, and I think, from a logical standpoint, you know, an FSPR 30, versus an SPR 40, I think what I heard in the presentation was that an SPR 40 provides a buffer that allows us to avoid depleting the males, which is kind of what we've seen in the assessments thus far, is we started out, I think, with SEDAR 33, if I'm not mistaken, where we used female only, and this last one, as was presented in some of the life history information, is that we've seen a big depletion of the males, and I think that's coming to be an issue, and that's why we looked at not having a female-only value, but we looked at males and females, and we got off of Fmax and went to SPR 30.

I think, with the SRFS runs, we're looking at those, and we may not be as higher level of landings and those types of things, but I think it's good to have a discussion on whether we want to recommend an FSPR 40, which I think is conservative.

It's not as conservative as some of the literature shows it may be, but certainly it's better than Fmax, and we looked at SPR 30

last time, and we were comfortable with it, but maybe we want to look at SPR 40, which is a little more conservative level, and avoid really depleting the males in this fishery. Any discussion on that? Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Actually, I can offer a motion, if you would be willing to entertain one at this point?

CHAIRMAN NANCE: Absolutely.

DR. BARBIERI: I will send this to Bernie, and I didn't yet, Bernie. **The SSC recommends F 40 percent SPR as the FMSY proxy and the basis for status determination criteria for Gulf of Mexico gag. Accordingly, the SSC recommends that projections based on F 40 percent SPR --** Let me just email this to you, Bernie. I'm sorry.

CHAIRMAN NANCE: Bernie, I am always amazed how fast you're able to put in something while they're speaking. It's okay.

DR. BARBIERI: Bernie, my apologies. That was my fault.

CHAIRMAN NANCE: So we've sent that. Just a moment, and we'll have that up, but Luiz has sent his motion to meetings, to be able to put it up there.

DR. BARBIERI: I guess the only correction there would be either we change the "MSY", in the text that I sent you, to "FMSY", or we change the "yield at 40 percent" to --

CHAIRMAN NANCE: Go ahead and read your motion, Luiz, please.

DR. BARBIERI: The SSC recommends -- Let's change that to yield at F 40 percent SPR.

CHAIRMAN NANCE: Yield at 40 percent SPR.

DR. BARBIERI: As the MSY proxy and the basis for status determination criteria for Gulf of Mexico gag. Accordingly, the SSC recommends that projections based on F 40 percent SPR and the medium red tide scenario be used to establish OFL, ABC, and rebuilding schedules.

CHAIRMAN NANCE: Okay. Thank you. Do we have a second for this motion? Mike Allen has seconded that. Is there discussion, please? Ryan is going to -- Did you send them to Bernie, or are you going to go ahead and --

MR. RINDONE: I am just going to blab them at you, and you can --

CHAIRMAN NANCE: That's fine.

MR. RINDONE: The SSC recommends the yield at F 40 percent SPR as the appropriate MSY proxy and the basis for stock status determination criteria, or stock status determination criteria for Gulf of Mexico gag grouper. Accordingly, the SSC recommends that -- You still need your consideration of BSIA, if you're going to be recommending catch limits, Luiz, and so how you want to incorporate that in here I guess would be some artistic license.

You could say, accordingly, using projections based on F 40 percent SPR and the medium red tide scenario -- Say, accordingly, projections, and so delete "using", and I am butchering this thing, and so you stop me whenever you want.

Projections based on F 40 percent SPR and the medium red tide scenario are consistent with BSIA and should be used to establish OFL, ABC, and rebuilding schedules, because, ultimately, the council can make the decision about the pace of rebuilding, et cetera, and so, now that I have gone through there with a hatchet and a shovel --

CHAIRMAN NANCE: Luiz and Mike, are you comfortable with those changes?

DR. BARBIERI: **Yes, no concerns.** Thank you, Ryan.

CHAIRMAN NANCE: Okay. Thank you. Roy, please.

DR. CRABTREE: The one thing then that's left out of here is the recreational landings to use, whether we're going to base on SRFS or the FES, and I think either one is consistent with the best available science, but I think, given the direction we're going, where the desire is to go, I think, somewhere in here, we could say using the SRFS landings series are consistent with the best available science and should be used to construct the values.

DR. BARBIERI: I had a separate motion, Roy.

DR. CRABTREE: Okay. It could be done that way.

DR. BARBIERI: It doesn't matter. I just had a separate one.

CHAIRMAN NANCE: I think, in my mind, this motion is kind of where we want to go with what we're talking about. Whether we use SRFS, or whether we use MRIP-FES, I think this is a recommendation, and

then we could have a separate motion to -- If we wanted to say which one we felt more comfortable with. Ryan.

MR. RINDONE: I guess the only thing, from a how I have to use this to write the rebuilding plan perspective, it certainly would be nice for it all to be packaged into one thing, for the council and for GC and for me. Where it says, "accordingly", you could swap "accordingly" out with "using" -- Then insert that survey, because all of that information pins down which model you're going to use, right, and so which data stream are you using for the private angling landings, which proxy are you using for F at MSY, which severity are you using for the red tide removals, and all of that translates into a model.

You guys were given four models, essentially, two FMSY proxies each for MRIP and for FES, and so, by specifying in here which fishery-dependent index you're using for the private angling landings, that tells me, and everybody else, exactly which model it is that you are recommending be used for providing catch advice and establishing a rebuilding schedule.

DR. BARBIERI: If I may, Mr. Chairman.

CHAIRMAN NANCE: Yes, please.

DR. BARBIERI: I don't disagree one bit, Ryan, and so I sent you the separate motion, which had additional language, right, and perhaps you can merge the two together.

CHAIRMAN NANCE: What I think Ryan was saying is, using projections based on SPR 40, SRFS data, and -- I mean, if we put that in there between "F 40 percent SPR" and "the medium red tide" --

MR. RINDONE: Luiz, what if --

DR. BARBIERI: Right, and I don't disagree. I mean, the thing is, when I was trying to write this, I was trying to say, okay, which decision comes first, right, in terms of accepting the model, versus making a decision, and I was conflicted as well, and so this is not bothering me one bit, but I was trying to cover, with the second motion, the use of the data series as well as, you know, consistent with BSIA, as well as stock status determination, because we have a new base run, right, and so I was trying to be explicit about that, but how we're going to mesh this -- Maybe we can take a break and try to mesh it.

CHAIRMAN NANCE: Ryan, go ahead, please.

MR. RINDONE: Maybe what you do is this motion is just the first sentence, and then the next motion is a blend of the second sentence and the smaller text below it, which we could work on next, and so, by defining what you think is the more appropriate MSY proxy, that gets at part of the point of the discussion of this agenda item, which was to determine if you guys thought it was appropriate to modify your recommendation for an FMSY proxy for gag, because, regardless of which model is used, that's an important decision that has to be made anyway, and so you could take up this part of it first, and then we could go hack up the other one.

CHAIRMAN NANCE: I think that's -- I would like to do that. Luiz and Mike, is this one-sentence motion, what we're going to go with, is that okay with you two? I will be happy to read it, and we're going to discuss it, and so, Harry and Doug, don't worry, and I'm not going to pass you up here.

Let me just read this motion, and we'll keep it open for discussion, but this will be the first motion that we'll have on the table. **It says the SSC recommends the yield at F 40 percent SPR as the appropriate MSY proxy and the basis for stock status determination criteria for Gulf of Mexico gag grouper.** That motion was made by Dr. Barbieri and seconded by Dr. Allen. Harry, please.

MR. BLANCHET: Thank you, Mr. Chairman. I know we have had some discussion about the rationale for 40 percent, but it is still a relatively rare benchmark to be used in our history, and one of the primary bases for its use is the Harford et al. paper, and I am trying to recall if we have ever given a full review of Harford.

I know that it has been provided to the SSC on several occasions, and I can recall at least two, but I don't know if it has ever been thoroughly reviewed, and basically acted upon, and what I'm concerned about is that we have an adequate record that we have considered -- So that we have a good support for taking up a 40 percent SPR as the proxy, and that's my concern, and, if people say that we've done that, then fine, but I just want to make sure that we have built a record there.

CHAIRMAN NANCE: Thank you very much, Harry. Doug, please.

MR. GREGORY: Okay, and my original thoughts were on the part of the motion that has now been pushed to the side, and so I do want to comment on that, when that comes up, but, to follow-up with what Harry has said, we did have a presentation by Harford in July of 2019, and that's in the minutes and the summary reports.

Part of the discussion then was, if I remember right, red grouper and gag grouper stood out as outliers in the grouper complex, and we had some questions for him to follow-up on, and I don't recall that being done, but, in general, yes, but I would go back to -- I would rather go with the raw data that shows that recruitment has not, obviously, been impacted by low sex ratios, and so that concern is logical, but it has no real evidence of being real. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Mandy, please.

DR. KARNAUSKAS: Thanks. I was going to basically make a point that Doug just did, that, if you look at Figure 3 of the Harford paper, gag is an outlier, and the draft shows that the selection of SPR 30 percent as a reference point is particularly inconsistent with the life history, and so I do think there is reason to recommend an SPR of 40 percent, where, in this case, it's warranted, as opposed to other species, where it might be less warranted.

CHAIRMAN NANCE: Okay. Thank you. Tom, please.

DR. FRAZER: I didn't hear all of what Harry was saying, and I was having a side conversation, but what I think he was saying is that, you know, regardless of how the SSC decides to go with this motion, if they adopt it, or recommend moving forward it, and it goes to the council, I think the council is going to want to know what data were used and what other information or life considerations underly the recommendation.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Yes, and, I mean, this will go to the council as an alternative in an amendment, and they will evaluate a range of reference points that will bring in all these papers and will certainly fall back before us to comment on again, and so this will be an iterative process and take a while. It will have to be very thoroughly explored.

CHAIRMAN NANCE: Carrie.

EXECUTIVE DIRECTOR CARRIE SIMMONS: Thank you, Mr. Chair. I think, Dr. Crabtree, could do that, but, now that the status determination criteria document has been approved, if they wanted to go with this new MSY that's recommended by the SSC, they could do that in a plan amendment, in the rebuilding plan, and not have to go through a range of alternatives.

Actually, if we did do that, I think we would have to do that after the rebuilding plan, because we have to develop, and probably take final action on, the gag rebuilding plan by June of next year, in order to meet the deadline for Magnuson.

DR. CRABTREE: So you're saying then that any change to the reference point would have to come after the rebuilding plan is done?

EXECUTIVE DIRECTOR SIMMONS: I'm saying a range of alternatives.

DR. CRABTREE: Okay. I wasn't aware of that change, but that's fine, if the system is set up to allow that.

EXECUTIVE DIRECTOR SIMMONS: Yes, and so it says, based on that status determination criteria document, and I think John is on, if he wants to add to this, and it says that, by allowing the council to adopt the new MSY proxy that is recommended by the SSC, and noting the change in a plan amendment, rather than by requiring a full action with a range of alternatives, and so we could do it in the rebuilding plan. If you wanted to come back later and look at a global MSY and ask for more analysis for gag, I think we would have to consider that later on, because of timing.

CHAIRMAN NANCE: Okay. Thank you. Jim.

DR. TOLAN: Thank you, Mr. Chairman, and this gets us a little more just to the motion. The way I'm reading this, and this goes back to something Ryan brought up a while back, but, before us, we have four potential alternatives. This one basically says we're going to narrow it down to two, and then the next motion we're going to take up is which of the two, the SEDAR 72 versus the new data stream, and so is that the way this is intended to be written? Okay. Thank you.

CHAIRMAN NANCE: Paul.

DR. MICKLE: Real quick, thank you, Mr. Chair, and it's toward the motion, and I feel like it just needs a little bit of justification. I know you will convey this motion to the council, and it's in the minutes, all of our discussion, but it seems like we took in a lot of discussion of a lot of factors of why we're making this motion.

I always like it in the motion, because we're a science group, and I like the science that we talked about to be in the motion, because it carries its weight all the way through, word-for-word, for what the motions are to the council that we made. Anyway, the

other thing is it should be "FMSY proxy", if I'm not mistaken, for the motion. It's not? Okay. Gotcha. Thank you.

CHAIRMAN NANCE: Yes, and it's the yield at that F that is the basis for MSY. Any other discussion on this motion? I'm going to read it, and then we'll ask for the vote.

The motion is the SSC recommends the yield at F 40 percent SPR as the appropriate MSY proxy and the basis for stock status determination criteria for Gulf of Mexico gag grouper. Is there any objection to this motion? Any opposition?

MR. GREGORY: I oppose the motion.

CHAIRMAN NANCE: Thank you. Any others? **The motion carries with one opposition.** Let's go ahead and -- Do we have time to do this next one? Did you send it to Bernie? Okay.

DR. CRABTREE: I think the next motion has to do with projections, right?

CHAIRMAN NANCE: No, and let's see --

MR. RINDONE: (Mr. Rindone's comment is not audible on the recording.)

DR. CRABTREE: I know, and I'm wondering if it's not time to see them, or do we -- I guess that's my question, is should we see the projections, or is the next motion independent of the projections and we don't need to see them?

DR. BARBIERI: We can look at both sets of projections, but the next motion will be trying to define --

CHAIRMAN NANCE: The model.

DR. BARBIERI: The model, what we consider the base model, right?

CHAIRMAN NANCE: Right, and so let's go ahead and -- Do you have that motion? Bernie, do you have that motion that Ryan -- We have a motion. Luiz, do you want to make this motion? I am going to read the motion -- Go ahead, Luiz. Go ahead and read it.

DR. BARBIERI: I can, or you can. How about you do it, Mr. Chairman?

CHAIRMAN NANCE: I will read the proposed motion, and we can -- It's a little bit unorthodox, but that's good. **The SSC determines**

that the SEDAR 72 Gulf of Mexico Gag Operational Assessment State Reef Fish Survey run, based on the combined-sexes SSB and the corrected State Reef Fish Survey data and MSY proxy of F 40 percent SPR and the medium red tide scenario is consistent with the best scientific information available and should be used for the basis of stock status determination and management advice. Based on this assessment model, the stock is determined to be overfished and undergoing overfishing. Luiz.

DR. BARBIERI: So moved, Mr. Chairman.

CHAIRMAN NANCE: Okay, and so that motion was made. Do we have a second for this motion? Will.

DR. PATTERSON: I will wait for the second to discuss. Thanks.

CHAIRMAN NANCE: Thank you very much, and that first part is long, but I like it, because it's very specific, and it doesn't give any room for not knowing what this model run is, and so we have a second by Will for discussion, and I will go ahead and open it up for discussion. Will, please.

DR. PATTERSON: I'm sorry, Jim, but I didn't second the motion. I said I would wait until it was seconded.

CHAIRMAN NANCE: I'm sorry. I'm sorry. My fault. Do we have a second for this motion? Jim Tolan seconds the motion. Will, for discussion, please.

DR. PATTERSON: This is a question for Luiz. I don't understand what is meant by "is consistent with the best scientific information available" versus explicitly stating it accepts this as the best scientific information available.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: Thank you, Mr. Chair. That's based on the language that was advised to us from NOAA Headquarters, from Dr. Patrick Lynch, at the last meeting about the way in which the SSC should be making these recommendations, because, ultimately, the prerogative for defining what is in fact BSIA is beholden to the agency, because it's the agency that ultimately has to interpret it and defend it in court.

The SSC makes recommendations to the agency and to the council about what is consistent with BSIA, and so we are trying to craft these motions in a manner that is consistent with the process and based on the advice of Dr. Lynch at the last meeting.

CHAIRMAN NANCE: Thank you, Ryan. Any other discussion or questions on this motion? Jim, please.

DR. TOLAN: There is really four parts to this, and two of them don't change from the original model run, and it's still combined sexes, and it's still the medium red tide scenario, and are those necessary?

CHAIRMAN NANCE: I think it is, only, from my perspective, so that there's no one that is going to say I wonder if they used what we did last time.

DR. TOLAN: True, but that's pretty well covered in the report.

CHAIRMAN NANCE: Well, but since this motion -- You're going to have to go back to the report to look at it, and so I think, from the motion standpoint, I like it, in the fact that there's not any question about what this is implying.

DR. TOLAN: Thank you, Mr. Chairman.

CHAIRMAN NANCE: Thank you. Mandy, please.

DR. KARNAUSKAS: Thank you, Chair. I just had a question on the State Reef Fish Survey and how we're getting to the conclusion that that is consistent with the best scientific information available. To my knowledge, and I could be missing something, I don't know of any information, or analysis, that would lead us to believe that that is more accurate than the MRIP, and my understanding was that the certification process is still going on, and so I'm just curious, from the rest of the SSC, how we are getting to the reliance on the State Reef Fish Survey.

CHAIRMAN NANCE: Luiz, to that point?

DR. BARBIERI: Yes, and, Mandy, actually, this is not trying to address accuracy in the results between the two surveys. I mean, it's been demonstrated that the SRFS survey is actually likely to be more precise, because it was developed specifically for this stratum, this component of the fishery. Instead of being a generalized survey that is surveying both inshore, nearshore, and offshore stocks, and it's a more general monitoring program, and this one is more focused and directed.

The survey has been certified by MRIP, formally, and it went through the formal review, peer review, process and certification process, and, this past February, we worked with the Gulf States

Commission and the NOAA Fisheries Office of Science and Technology on conducting a transition process and developing a transition plan for all the Gulf surveys that are being developed as supplemental or substitute surveys in the Gulf.

The recommendation, during that workshop, and this is reflected in a subsequent report that was released as a result of that workshop, was that this survey be used as the most appropriate for assessment of this specific stock, and so does that answer your question, Mandy?

DR. KARNAUSKAS: Yes. Thank you for giving me that additional background.

CHAIRMAN NANCE: Okay. Roy, please.

DR. CRABTREE: That's fine, and I'm okay with the motion. To me, the SRFS survey -- It probably has some advantages, in terms of monitoring the stock and things, and, whether it's most appropriate for this species -- It may be for monitoring the catch levels and those kinds of things, and, I mean, I would prefer not to go down the path we're on, but it's the path we're on, and it's where we are, and so I will support the motion.

Just I think the record is pretty clear that we aren't making a judgment call about one survey is better than the other. In this case, we think -- I know that's not in the motion, but it's more how people are saying things, and I think, clearly, there are some advantages, in terms of precision and things, that would argue this is a good survey to use to track this henceforward, and that makes sense and all.

DR. BARBIERI: Just to repeat, this is not to compare the surveys, right, and, I mean, this recommendation is consistent with the result of a study by the National Academies of Science that really was put in place to evaluate, especially for in-season management and using smaller geographic scales, which surveys would be most appropriate, and so this is consistent with those recommendations.

CHAIRMAN NANCE: Okay. Trevor, please.

MR. MONCRIEF: I just wanted to say that, I mean, if we've got members of the SSC that are speaking to that point, and our group is kind of teetering between these, just -- I think we should probably give it some thought, or at least the folks that are on the call that are going to be dealing with the rulemaking process and everything else should kind of give it a thought, as to how this motion will be perceived not only by stakeholders, but the

council and everybody else, because there seems to be, obviously, some implicit understanding when the motion was passed, and so we probably need to make sure it's described specifically what we're doing.

CHAIRMAN NANCE: When I present at the council, I will try to do that, to my best ability, and I appreciate that, Trevor. Mike Travis, do you have a comment on the motion?

DR. MIKE TRAVIS: Maybe more of a question that has been brewing in my mind for a while, but Mandy's question motivated me to bring these issues up, and so the first part of my question is, if we're relying on SRFS, how are we going to be monitoring the recreational gag landings that are coming in from Alabama and Mississippi and Louisiana, and then, similarly, how do we come up with consistent Gulf-wide effort estimates across the four states? Granted, there's not a lot, but they are definitely there.

CHAIRMAN NANCE: Ryan, to that point?

MR. RINDONE: Those would still be collected through FES, the way that they are now, and so, in the model that Lisa conducted, the private angling landings for the State of Florida are substituted out for SRFS. The data from the rest of the states, as collected, remains, but it constitutes less than 5 percent of the private angling harvest of gag in any given year, and so, insofar as it's relevant to the landings, it's a very small proportion of the landings.

Similarly, like -- Luiz can speak to this too if he likes, but, for SEDAR 64, when we looked at yellowtail snapper, better than 99 percent of the landings are from the State of Florida, but there are occasionally some landings for that stock that come from places like Texas or North Carolina, et cetera, but it's a very, very small fraction, and it has little to no consequence at all on the trajectory of the stock's performance at the time or trends in landings or anything like that, as to whether they're included.

DR. TRAVIS: I don't think that answered my question though. I'm asking about monitoring the landings and getting them into consistent units, similarly with the effort. How do we get them into consistent units?

CHAIRMAN NANCE: It's just a calibration, but, Roy.

DR. CRABTREE: Well, my understanding of what the assessment did is it used the FES values from the other states and the SRFS values from Florida, and so I assume, when the landings are totaled up,

they will combine the FES values from the other states and the SRFS values from Florida, because that's how the assessment handled it, but the other state landings are very small, and they're not likely to have much impact on things, but it seems, to me, that you would do it the way the assessment did it.

DR. TRAVIS: So they effectively added up apples and oranges?

DR. CRABTREE: There are issues with all of these ways of doing it, Mike, but my understanding is that is how the assessment did it.

CHAIRMAN NANCE: Yes. Okay.

DR. TRAVIS: Okay. I didn't hear that explained along the way, and so all right.

CHAIRMAN NANCE: Thank you. Any other discussion from the SSC for this motion? Will.

DR. PATTERSON: Thank you, Mr. Chairman. So we've heard a couple of rationales here for utilizing the SRFS data stream versus the FES, and Roy had mentioned that, if the fishery is going to be monitored in the SRFS landings estimates, at that scale, then, obviously, you would want to have the assessment done similarly.

Luiz talked about the National Academy's work and the certification going on with all the state surveys, and he mentioned that SRFS was more precise, given how it's designed for this sector, and it's a more specialized survey, versus a more generalized survey, for MRIP, but, to me, if you're going to change an important data stream, such as recreational landings, the first question I would ask is are the new data, or the new approach, more accurate?

Precision is important, but we can see, and Shannon makes a good point about fixing steepness and that idea of stock productivity not changing, but we're still scaling by changing the landings stream, and, because steepness is fixed, the only thing this model can do is change R0 or spawning stock biomass 0.

We are changing what we're estimating the stock can produce on an annual basis, right, and we're changing the magnitude of historic catch, and we would be changing then what we think the magnitude of the future catch can be, and so, while precision is important, I think accuracy is more important to evaluate, and do we get a more accurate -- Does the new data stream provide more accurate estimates, and, in doing so, do we sacrifice precision?

It sounds like we gain precision, but I don't see anything that suggests anything about accuracy, and, you know, Luiz explained some of this in his response to Mandy's question, but, you know, I don't think we've actually reviewed this.

CHAIRMAN NANCE: Thank you, Will. Luiz, to that point, please?

DR. BARBIERI: Will, this is an ongoing question, right, that's being addressed, and so there is an effort now in the Gulf taking place, and this is being coordinated between the Gulf States Commission and NMFS Office of Science and Technology and developing a process for putting together a number of studies that will collect additional data that would allow us to measure the difference, potential difference, in accuracy of these different surveys.

What happens is, from a statistical perspective, it's very difficult, if not impossible, for you to tell, because you don't know what the true value is, right, and so you just have estimates from different surveys, and it's not uncommon, when you discuss it with the professional survey statisticians, for this to happen, and it happens in several fields that they deal with, where you have different data collection programs, different surveys, and they produce different estimates, and that has to do with a whole variety of sampling and non-sampling issues that can come into play there.

For that purpose, then the review, the discussion by the NMFS statistical consultants, basically arrived at, well, we cannot tell which one is the most accurate without collecting additional data and develop some additional studies, right, that can address specific issues that might be leading to different outcomes here.

That is in process, and I believe that we have a timeline now of approximately five years, and Congress has appropriated, I believe $2 million to this purpose, right, that this funding is going to be ongoing. Some conversations that I have heard have mentioned that there will be a contract with the American Statistical Association, so we can have, you know, top-of-the-line survey statisticians involved in developing these studies and the review of the outcomes, to then arrive at that final resolution there, but, at this point, Will, we don't know.

CHAIRMAN NANCE: Thank you, Luiz. Trevor.

MR. MONCRIEF: I will echo that sentiment. I mean, as we keep seeing all the different surveys and everything else like that, I don't think there's ever going to be -- We don't have it in our

hands right now to be able to say which one is more accurate than the other.

Now, each group has their own thought processes, and there is data streams to be able to evaluate to do the comparisons, but I think we're a little ways off to be able to have a definitive, quantitative statement of which one is more accurate, and so I was going to go back to the point about the apples and oranges in the different states and how they're being added up.

I mean, at the end of the day, the landings from Florida, as Ryan said, vastly outweigh any of the landings from anywhere else, and, to turn that colloquial statement -- It's not necessarily apples and oranges, because it's assuming they kind of have the same weight here, and they really don't. I mean, in reality, what you're doing is adding up apple and orange seeds. You're adding up straight up apple and orange seeds, because the quantity that's coming out of Florida is just so vast that the landings from the other states are negligible and have no impact.

While I understand the concern, and it certainly would be a concern for other stocks that have more landings across other states, I don't think that's necessarily a grave concern for this stock, and so I just wanted to add that in.

CHAIRMAN NANCE: Thank you, Trevor. I'm going to read -- Any other discussion? I am going to go ahead and read the motion. Harry, please.

MR. BLANCHET: This is to Will's point about -- Dang it. Now I just lost where I was at. There. It's back. This is to Will's point about the differences between the two surveys. If you take a look at our current conditions, in terms of F compared to benchmarks, or spawning stock biomass compared to benchmarks, at a given FSPR proxy, they are not identical, but, whichever survey you use, we're in very much the same position, and the changes are at the second decimal place.

I think that -- To say that it is consistent with the best scientific information available is not a hard reach, because they are so consistent when you're comparing a given harvest versus a benchmark, and so the benchmarks move, and the harvest estimates move, and the resulting ratios are pretty consistent, whichever metric you're using for landed harvest. Thank you.

CHAIRMAN NANCE: Thank you, Harry. I'm going to read the motion and go ahead and take a vote. Josh, please.

DR. KILBORN: Thank you, Mr. Chair. Just I'm curious, because one of the implications of making this decision of whether or not to use FES versus SRFS comes back to a different number with respect to the spawning stock biomass, the virgin spawning stock biomass, and that's going to have implications for the rebuilding target, and so, you know, I guess I echo some of the original sentiments that we need to think about this a little harder and get some better review put in front of us, but I'm curious, and just what does the group think about how that's going to affect the different rebuilding strategies and the future projections? You know, we also haven't looked at any of the projection information before we're making this decision, and I wonder if that's wise as well. Thank you.

CHAIRMAN NANCE: Thank you, Josh. Doug, please.

MR. GREGORY: Thank you. I agree with Joshua and Harry that we haven't looked at the analyses, and making this decision before even reviewing the analyses seems like we've got the cart before the horse, and I also agree with Harry, and I think that we really should not be throwing the FES assessment, SEDAR 72, out the window, given that there's no real difference in the result, the impact, the management impact, of the two, but it could have unknown ramifications in the future, and so I am very much opposed to this motion, particularly at this time.

CHAIRMAN NANCE: Thank you, Doug. Jim.

DR. TOLAN: Very quick, and thank you, Mr. Chair, and this really gets back to the point I made about splitting this into two motions and the four choices we have before us, and I think this clearly gets us down to one of those models, and the MSRA table clearly shows that it's overfished and undergoing overfishing, and so there's nothing that we're throwing out. We're just saying, of the four options, here's what the SSC thinks is the best path forward. Thank you.

CHAIRMAN NANCE: Thank you. Okay. Let's go ahead and -- I'm going to read the motion, and then, Bernie, we'll do a roll call vote on this one. **The motion reads: The SSC determines that the SEDAR 72 Gulf of Mexico Gag Operational Assessment State Reef Fish Survey run, based on the combined-sexes SSB, the corrected SRHS data, an MSY proxy of 40 percent SPR, and the medium red tide scenario, is consistent with the best scientific information available and should be used as the basis for stock status determination and management advice. Based on this assessment model, the stock is determined to be overfished and undergoing overfishing.** Let's go ahead and take that -- There we go. Thank you, Bernie.

MS. ROY: Jim Tolan.

DR. TOLAN: Yes.

MS. ROY: Trevor Moncrief.

MR. MONCRIEF: Yes.

MS. ROY: Doug Gregory.

MR. GREGORY: No.

MS. ROY: John Mareska.

MR. MARESKA: Yes.

MS. ROY: Jack Isaacs.

DR. ISAACS: Yes.

MS. ROY: Will Patterson.

DR. PATTERSON: No.

MS. ROY: Paul Mickle.

DR. MICKLE: Yes.

MS. ROY: Benny Gallaway.

DR. GALLAWAY: Yes.

MS. ROY: Harry Blanchet.

MR. BLANCHET: Yes.

MS. ROY: Luke Fairbanks.

DR. FAIRBANKS: Yes.

MS. ROY: Mandy Karnauskas.

DR. KARNAUSKAS: No.

MS. ROY: Steven Scyphers.

DR. SCYPHERS: Yes.

MS. ROY: Jim Nance.

CHAIRMAN NANCE: Yes.

MS. ROY: David Griffith.

DR. GRIFFITH: Yes.

MS. ROY: Roy Crabtree.

DR. CRABTREE: Yes.

MS. ROY: Luiz Barbieri.

DR. BARBIERI: Yes.

MS. ROY: Mike Allen.

DR. ALLEN: Yes.

MS. ROY: Cynthia Grace-McCaskey.

DR. GRACE-MCCASKEY: Yes.

MS. ROY: Josh Kilborn.

DR. KILBORN: No.

CHAIRMAN NANCE: Thank you. **It looks like the motion carried.** We appreciate the discussion for this. We'll go ahead and break for lunch, and we'll take the other motions after lunch. We'll come back and reconvene at 1:15 Eastern Daylight Time. Thank you. Have a great lunch.

(Whereupon, the meeting recessed for lunch on July 7, 2022.)

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July 7, 2022

THURSDAY AFTERNOON SESSION

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The Meeting of the Gulf of Mexico Fishery Management Council Standing and Special Reef Fish, Special Socioeconomic & Special Ecosystem Scientific and Statistical Committees reconvened on

Thursday afternoon, July 7, 2022, and was called to order by Chairman Jim Nance.

CHAIRMAN NANCE: Welcome back, everybody. I hope you had a good lunch. We'll go ahead and restart, and I think what we'll do now is we'll look at projections, and, Bernie, I think our last slide was Slide 32. Dr. Ailloud, are you online? Okay. It's good that Shannon has interpreted it for us.

DR. AILLOUD: Yes. Sorry, and I was muted.

CHAIRMAN NANCE: That's good. We're glad to have you back unmuted. Let's go ahead, I think, and we'll go -- Let's go through the rest of the projections.

DR. AILLOUD: Okay.

CHAIRMAN NANCE: Thank you. Okay, and so, for the F rebuild scenario, and Katie mentioned this, and so I just wanted to make explicit how those timelines are calculated, to make sure we're all on the same page, and so I calculated Tmin, which is the minimum time required to rebuild under no fishing, F of zero.

The F of zero starts in 2023, which is the first year of management for gag, and, to determine whether the stock is rebuilt in a certain year, we pull out the estimates of spawning stock biomass at the beginning of the year, and so, on January 1, what is the estimate of spawning biomass, and how does it compare to our SSB MSY proxy, and whether or not it exceeds one and shows that the stock is rebuilt.

Given that, I have set out, again, everything in comparison here with SEDAR 72. Again, everything is headboat corrected here, and SEDAR 72 is on your left, and SRFS is on the right. This is the FSPR 30, and these are the OFL projections.

Now, these are the F zero projections for the FSPR 30, and, as we've discussed, the timeline -- This kind of small change in data did tip the scale a little bit for the SEDAR 72, where it originally needed eleven years to rebuild, and now it needs exactly ten, and you see that it reaches a ratio of one in 2033, and, for the SRFS run, it also takes ten years, which is not surprising. Like we've been discussing, really, we're looking at a scale difference here, and so the change from SRFS to FES does not affect, really, the rebuilding timeline, and it just affects the scale of the yield and the scaling of the population.

I provided also SPR 40, as requested, and those are the OFL

projections, and the F zero, and so, F zero -- For an FSPR of 40, it takes slightly longer to rebuild. It takes thirteen years under a SEDAR 72 run and twelve years under the SRFS run, and so establishing this Tmin of thirteen and twelve years.

I went ahead and ran the projections with a Tmin times two, since that was the preferred approach back when we were looking at older SEDAR 72 models, and it's the longest timeframe of rebuilding that is allowed if we need more than ten years to rebuild under an F zero, and, on the next slide, you just have the rest of that table listed here.

Now, I did add a -- If you saw in the report, I created some tables that show the change in retained yield through these projections and the change in discards, and I provided these tables as well in the presentation, at the end, as extra slides for your reference, and so I'm happy to discuss any of that as well, if there are questions, and I know there's been a lot of discussion as to what happens to the discards and what is the assumption that is being held for these projections.

CHAIRMAN NANCE: Thank you. Roy, please.

DR. CRABTREE: Thanks, Lisa. But what troubles me about the projections is the lack of accounting for red tide, and we've been having two or three red tides a decade, historically, and so the natural mortality -- I think what the assessment uses is M equal to 0.159, but, actually, M is substantially higher than that, if you include the red tide mortality in it, yet, when we do the projections forward, it seems to me that we're, on average, underestimating the natural mortality rate, and so, for example, I look at that recovery at F zero, where it recovers in ten years, but I'm pretty sure that it would not recover in ten years, if you threw a red tide or two into the mix, and I think it's difficult to make any defensible argument that it's reasonable to assume that we're going to have a decade without any red tide at all, and so, really, to me, what I see with that is that it's very unlikely that this stock could recover in ten years or less, even at zero fishing, and so I wonder --

I don't know if there's a solution to deal with this that is helpful in the timeframe or not, but it does seem, to me, for a stock like this, where we have this red tide component, that the natural mortality rate, overall, is actually higher than the M used in it, and there's got to be some way to factor that into the projections, or, otherwise, it seems, to me, that we're making unrealistic assumptions, and do you have any thoughts on that, Lisa, or have you all talked about that?

DR. AILLOUD: Yes, we've definitely discussed it internally. I mean, that's why there was a push to include that 2021 red tide, at least, because we do have an ecosystem model to stand on to make an objective decision on what point estimates to add.

The issue is that, for one, we don't have a good understanding of the magnitude and frequency, and I will say that, even the recent red tide, like the 2018 one -- If you look at the estimated red tide magnitude in the model, there is quite a bit of uncertainty. It's possible the impact is being overestimated and will come down, and it's possible that it's the other way around, and so I think we want to include that sort of uncertainty in the future. I don't think, within this timeframe -- At least we weren't able to address that within the timeframe, and I don't know if Katie or Shannon would like to add anything.

I do have just one minor point though, to add to kind of the complexity of the red tide, and someone alluded to the fact, earlier, that red grouper seem to have some pretty good recruitment following red tide events, and we are seeing that in gag.

It's not as obvious, but we're seeing it in the stock assessment model, and we're seeing it in the ecosystem model as well, and, you know, if we start to think about what the impact of the red tide is in the projections, in terms of a higher M, then there's the counterargument of maybe the recruitment could be boosted a little bit as well the following year, due to decreased competition, and so it's not as straightforward of an answer, but it's definitely something that we want to address, and so I will let other people from the Center, if they want to add to it.

CHAIRMAN NANCE: Thank you. Dr. Calay.

DR. CALAY: Well, I do think that Roy's point is well taken. I mean, obviously, if there are additional sources of mortality, be it episodic natural mortality or discard mortality, that we are not incorporating into these projections, or are higher than we assumed, then it would delay the recovery plan, and so that is a true statement.

Of course, our time is very limited, and, in fact, the time it's taking to do additional gag requests has already been delaying the gray snapper assessment, which Lisa is also the lead on, and so there is that issue.

I do think though that this could be addressed. Once we establish OFLs and ABCs, we could address how well we are meeting the

recovery plan by looking at interim assessments, essentially, that we do with some frequency, and so there is a possibility of -- I do think we need to recognize that, whenever our projections underestimate the total removals, the rebuilding plan will be delayed.

I do think it's quite plausible that there will be red tide events, and I do think it's quite plausible that the discards will be higher than we assumed, and I think, if we find those to be true, it would be wise to conduct an interim assessment.

DR. CRABTREE: Yes, and I'm certainly not -- I don't want to hold anything up, but it is an issue, but I do think -- I think you could make a compelling case that, based on what we have, the stock, at F zero, cannot recover in ten years, and I think you could make the argument and get around the ten-year requirement, based on that, but it would be a more here's the projection, and then here's what we know, and here's how this works, and that's why it's not realistic, but, anyway, that's just a problem that I see with the nature of these, and I don't have a solution.

CHAIRMAN NANCE: Thank you, Roy. Shannon, the discards are estimated at the same rate as landings, correct?

DR. CALAY: Well, essentially, we assume that, if you reduce the landings, you will reduce the discards by the same proportion, but, in fact, what tends to happen, if you reduce the retained landings, is the discards actually increase, because of the catch-and-release, and so that is something the Science Center is actively working on, is better -- Providing information that's more consistent with the management choices that are likely to be made.

Our projections currently assume that you will actually reduce effort, but, in fact, we only control retained landings, and so that is a research area that we're working on as we speak.

CHAIRMAN NANCE: Okay. Thank you. I think, as we look at these projections, these are the minimum, certainly, and so we need to take that into account, from our management perspective. Thank you for that insight. Mandy, please.

DR. KARNAUSKAS: I agree with Roy's point that this is a minimum, because we're not accounting for the red tide mortality, and I don't really have a solution to this problem. As Shannon and Lisa mentioned, it's something that the Science Center has been trying to figure out for a long time, how to incorporate red tide into the stock assessment and the projections, but I did want to

highlight that there is another Harford analysis that was done, a management strategy evaluation, where he looked at the amount of buffer you would have to put on the annual catch limit in order to account for red tides of unknown future frequency and magnitude, and he looked at, you know, how relative percent buffers from the ACL would lead to long-term management outcomes, in terms of preventing overfishing and keeping the stock from being overfished.

I don't know if it's in the SSC's purview, as part of this discussion, to recommend ACL buffers, but the analysis is highly relevant to this discussion, and it's something that we might just want to bring attention to.

CHAIRMAN NANCE: Thank you. If you have a copy of that paper, Mandy, maybe you could forward that to Ryan, and he could distribute that.

DR. KARNAUSKAS: Yes. Will do.

CHAIRMAN NANCE: I think it would be nice to be able to look at, for sure. Katie, please.

MR. RINDONE: It's actually up, and it's the 2016 paper that is on the website.

CHAIRMAN NANCE: Thank you.

DR. SIEGFRIED: Thank you. I have a question for Roy, and I don't dispute what he's saying. What I'm looking for is, given the fact that this was an operational, and we, many times, have said that we needed to -- That it would be better to address this red tide issue in a research track, and so we really had to stick to what has been done in the past and really streamline that effort, and Dave Chagaris was part of our panel and everything.

We have expressed that it's a need to do more research on this, but, at this point, with that constraint, and given that we have to establish a rebuilding timeframe, what would you need from the Center to explain that this is a floor? Is there anything else that we can provide that's not like a slew of projections, but some sort of uncertainty?

CHAIRMAN NANCE: What Roy brought up was an issue that he has as far as projections in general with these stocks, but, as far as something you can do overnight and present to us tomorrow, or even in the future, I don't think there's a way to be able to do that, and it's simply something that we need to, in the future, kind of

think about and look at.

DR. CRABTREE: What really, I think, highlighted it, for me, were the projections of the ten years and the notion that, at F equals zero, it could recover in ten years, and so you potentially shut the fishery down. Well, that seems, to me, to be very, very unlikely, and, depending on how much that became an issue with management, I think you could look at that and say that's an underestimate of the likely natural mortality removals, and so it's almost certainly not going to happen.

If that was the case, there may be things that the Center could provide that are more just explanations of how these things come together, but I don't know if that becomes an issue that really drives the bus or not.

Now, I think the issue that Shannon brings up about assuming the equal proportion reductions in landed F and discard F, that's a real issue that I think we need to talk about, because, almost certainly, if we just follow these projections to set the catch levels, we're going to be setting the catch levels too high, because it's highly unlikely that you're going to get the reductions in discard Fs, and that becomes a problem, because the catch levels, I suspect, out of the projections are going to be really low to begin with, but the fact is that they're probably too high to effectively end overfishing.

DR. SIEGFRIED: A follow-up, Mr. Chair, if I may?

CHAIRMAN NANCE: Yes, please.

DR. SIEGFRIED: We -- Like Shannon mentioned, this is an active area of research in the Center, and a few questions we have that we can present at a future SSC, or have you all mull over in the meantime, is sort of, okay, we cannot assume the same -- That effort reduces and the discards reduce in a straightforward fashion that way. We can assume discarding stays the same as it was at the end of the time series, but one of the concerns we have, internally, is how would we -- What information, or data, do we have to inform an increase in discarding, subsequent to a decrease in landings?

We don't -- I don't think we have enough real-world examples in our region to inform that percentage change, but it certainly -- I mean, it's an easy thing to model, but very little data exists to inform the model, and so it would really be a lot of speculation, and we're looking into ways to account for that, absent of the data. We can't just wait for ten years and see what happens,

right, but, if you all have ideas about that, like Shannon said, we're actively investigating this and would like your feedback.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Well, just on the face of it, it would seem, to me, that a starting place, and a more realistic place, would be to assume that the discard Fs remain unchanged and then figure out how much you have to reduce the landed F in order to get the total F to where you want it to be, and I don't know how you would predict what the discard Fs -- How they would change, and that gets awfully complicated, but it's more realistic, to me, to assume they're going to remain the same than to assume they're going to be magically reduced by some fraction, but this has been a problem here, and we've had these issues in the South Atlantic, and the only assessment I can recall where we dealt with it was red snapper, when we did do something, and I don't remember exactly what, with the discard Fs.

DR. SIEGFRIED: The discards only run in the South Atlantic?

DR. CRABTREE: Yes, and I think, in the Gulf, we did treat the discards differently in the red snapper assessment.

DR. SIEGFRIED: As separate fleets. Okay. Well, I just wanted to throw that out there, and I appreciate the ability to comment.

CHAIRMAN NANCE: Thank you, Katie. Harry.

MR. BLANCHET: My only thought on that how you handle the discards is essentially apply your closed season effort rates and associated discard rates to the entire year, and I don't know whether that's going to move things up or down, but I'm sure that this is one of those things that they will have already considered, and so I'm just throwing it out.

CHAIRMAN NANCE: Thank you. Any other discussion on the projections? From the SSC, how do we want to move forward in providing guidance to the council? Luiz.

DR. BARBIERI: I have to read this one more time here. Let me -- The second part --

CHAIRMAN NANCE: Go ahead and bring that other slide back up, Bernie.

DR. BARBIERI: That motion that was being built. In this case, basically, it's stating that the SSC evaluated the scientific

methodology used to develop the projections, and it's deferring to the development of the rebuilding plan, right, because, depending on different rebuilding timelines that the council may want to adopt, but the methodologies are acceptable, and they would have to be consistent with, you know, the reference point choices that we made explicitly in the previous motion.

CHAIRMAN NANCE: Thank you. Do you want to make this as a motion?

DR. BARBIERI: Yes, Mr. Chairman, I do.

CHAIRMAN NANCE: Okay. Let me read what the motion states. **It says the SSC determines that the yields corresponding to the rebuilding schedules based on Tmin, Tmin plus one generation time (eight years for gag grouper) and Tmin times two are appropriately calculated and suitable for informing catch advice.** Do I have a second to that motion? Mike Allen seconds the motion. Is there discussion, please? Roy.

DR. CRABTREE: My only hesitation, Luiz -- I mean, I think the Center did them exactly right, but, when we say, "appropriately calculated", how are we taking into account though that, in those projections, the reductions in the F discards are probably unrealistic, and that means the yields are probably higher than they can be in that case, and does that -- How do we jibe that fact with appropriately calculated and how we set the catch level advice?

DR. BARBIERI: Well, if I may, Mr. Chairman.

CHAIRMAN NANCE: Yes, please.

DR. BARBIERI: Well, we don't explicitly address those things at this stage, where we are, given that this is an operational assessment that we know about the constraints, the timelines involved, and that this issue is unlikely to be addressed in the short term, because it's still being thought out as an active area of research within the Center, and this may not be appropriately addressed in the short-term.

I don't think that this methodology that was used for these projections is any different, that I can think of, of any of the other ones that we have approved over the last year or year-and-a-half, and so I think that we have identified what I would say -- It's almost like research recommendations, or perhaps some goals to be achieved into the future, whereas, as for right now, I think we have appropriately configured projections that can serve management advice.

CHAIRMAN NANCE: Shannon.

DR. CALAY: Thank you, Chair. I had not been intending to interrupt your motion, and I did just want to say that the likeliest way that we can incorporate discards, in the future, is to create discard-only fleets, like we have done for red snapper, and that does require some actually restructuring of the stock assessment models, and so that does require time, and we should probably start transitioning to a future like that as soon as possible, but, right now, you're correct that the red snapper assessment is the only one, currently, that has discard-only fleets associated with it, and, for the other assessments, they do assume that discards will scale in accordance to the change in landings.

CHAIRMAN NANCE: Jack.

DR. ISAACS: I was just curious, and what do we know about the percentage of the fish that are discarded that perish?

CHAIRMAN NANCE: Shannon, I don't know if you --

DR. CALAY: I think that's a great question for Lisa.

CHAIRMAN NANCE: Off the top of your head?

DR. CALAY: I can't remember what SEDAR we're in, half the time.

CHAIRMAN NANCE: Lisa, I don't know if that's a -- If you can grab that quickly.

DR. AILLOUD: You're asking about the mortality rate of the fish that are discarded?

DR. ISAACS: That's correct.

DR. AILLOUD: Let me double-check that. I don't want to give you a wrong number.

MR. RINDONE: It also varies based on time of year, and so during -- Like, when the season opens in June, the water nearshore is hot, and so people are having to go further offshore, to deeper, cooler water, to find fish that are going to bite, and so, in hundred-plus, thirty-meters-plus, depth, you're going to be subjecting fish, more likely, to barotrauma, and you're going to be releasing them in bathtub water at the surface, and, anecdotally, and I guess there have been a couple of studies on some other species, we've seen that fish, especially large reef

fish, released in warm water, after being brought up like that, fare more poorly, being released in that hot surface water, than cooler water.

As the season progresses, effort tends to drop off in July, August, September, and then, once those cold fronts start to show up in October, a lot more of the effort starts to shift to nearshore fish, which start to bite as that water cools off, and we're talking twenty meters and less now where most of this effort is being directed, and it's almost exclusively females.

I don't think there's been any males recorded in any recent empirical studies, and Sue hasn't found any males inside of twenty meters. The commercial guys we've talked to, and the charter guys, none of them have either, but, generally, those fish release better, and the fight is shorter, because, a lot of times, they're actually coming off the bottom to feed, and so, as people are casting to them and drifting baits back to them, they're coming off the bottom, and so they're being caught in shallower depths that release better, and so, ostensibly, their survival should be improved, compared to the June open, when some of that effort is directed to the deeper water, and so, on the average, on the --

CHAIRMAN NANCE: Lisa.

DR. AILLOUD: The assumption that we have in the model -- We have a different mortality rate for commercial and recreational, and they are based on empirical data, and they're based on differences in depth of fishing. For the commercial, it's 25 percent of the fish die that are returned to the water, and, for the recreational, it's 12 percent.

CHAIRMAN NANCE: Thank you for finding that.

DR. ISAACS: Thank you. That 12 percent is lower than I would have suspected. Of course, I'm not a biologist, and so you shouldn't give any weight to my opinion on that matter, but thank you for that data. I appreciate it.

CHAIRMAN NANCE: Carrie.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair. I had a question about the motion, and perhaps I missed it. The Tmin plus one generation time, was that presented at this meeting?

CHAIRMAN NANCE: I think it is on there.

EXECUTIVE DIRECTOR SIMMONS: I thought it was the Tmin times two

or the Tmin, and perhaps I missed it.

CHAIRMAN NANCE: I know I've seen it, and I don't know where it was. I think it's in the paper. In the report, it's there, and, in the presentation, it's not.

EXECUTIVE DIRECTOR SIMMONS: But not for 40 percent.

CHAIRMAN NANCE: Yes. We have -- These tables are in the report, and it's -- We have the FSPR 40 percent.

DR. BARBIERI: But not in the report. Right, Carrie?

CHAIRMAN NANCE: I thought it was.

EXECUTIVE DIRECTOR SIMMONS: No, the 40 percent is not in there yet, I don't believe, and maybe Lisa can help us, but I think they were going to add that after, because it was such a late request for this meeting, and I think it's just Fmax and 30, the yield at 30 percent SPR, I believe.

CHAIRMAN NANCE: Do you have the Tmin plus one generation 40 percent, Lisa?

DR. AILLOUD: I don't have them, but I can run it right now. Because of time constraints, I just showed the F rebuild that was the previous preference, but, if you would like, I can run it and then circulate it.

CHAIRMAN NANCE: Let me ask you this though. From a motion standpoint, I'm not sure that seeing it affects what we're informing the council of, or does it? Luiz.

DR. BARBIERI: Well, right, because this is really about the methodology that was applied, and, Lisa, correct me if I'm wrong, if you change the methodology that was used, right, between the F 30, the Fmax, and the F 40 percent used for the projections?

DR. AILLOUD: We're just changing the benchmarks, and, for these Tmin ones, we're just changing the year in which we want the stock to rebuild, but everything else stays the same.

DR. BARBIERI: Right, and so, for this motion, I think we are covered, because the methodology is the one that we have already reviewed.

EXECUTIVE DIRECTOR SIMMONS: Okay, and so I've got you, and so you're just trying to give the council the same range of decision

points they had at the last meeting.

CHAIRMAN NANCE: Yes.

EXECUTIVE DIRECTOR SIMMONS: Okay. I just didn't see it in the presentation. Thanks.

CHAIRMAN NANCE: Okay. Thank you. Any other comments on the motion? Let me read the motion. **The SSC determines that the yields corresponding to the rebuilding schedules based on Tmin, Tmin plus one generation time (eight years for gag grouper), and Tmin times two are appropriately calculated and suitable for informing catch advice. Is there any opposition to this motion? Seeing none, and hearing none, the motion carries without opposition.** I think -- Go ahead, Luiz.

DR. BARBIERI: Well, just to confirm, because I think Dr. Simmons' point was a valid one, that we would have to have -- Just to be clear for Lisa, right, that if we could have all three sets of projections, the numbers produced, right?

CHAIRMAN NANCE: Yes, and I think -- Lisa, so that would be able to have those -- Well, I kind of have an idea of what the Tmin plus one generation would be, but it would be good to have those available for that. I think that ends --

DR. TOLAN: Mr. Chair, real quick?

CHAIRMAN NANCE: Yes. Jim.

DR. TOLAN: That table is in there, and it's Table 43 in the report, but it's Tmin plus one generation, but it's under the F 30 percent SPR, but it is there.

CHAIRMAN NANCE: Thank you, and I forgot that it was we had them, with time constraint, adding the FSPR 40 percent and the 40 percent SPR. Okay. Thank you. I think that -- Lisa, I don't think you have anything else, correct?

DR. AILLOUD: That is it for the presentation, but could I ask for a clarification?

CHAIRMAN NANCE: Okay, and so I think we're --

MR. RINDONE: Go ahead, Lisa.

DR. AILLOUD: I just want to check what is needed from me at this point, because, longer-term, I'm going to update the report with

the headboat corrections and every single of those F rebuild scenarios, but do you need anything from me like by tomorrow? Do you need any of these alternative runs?

CHAIRMAN NANCE: No.

DR. AILLOUD: Okay. Thank you.

CHAIRMAN NANCE: You're very welcome. I can see your smile. Again, thank you, and you did a great job on this, and this was one that was, I know, late nights and early mornings while you're running this, and so the SSC greatly appreciates your efforts.

DR. AILLOUD: Thank you.

CHAIRMAN NANCE: We will go ahead and move on to Item Number VI, which is review of discard data for gag grouper, red grouper, greater amberjack, and red snapper, and, Ryan, would you give us the scope of work for those, please?

REVIEW OF DISCARDS DATA FOR GULF GAG, RED GROUPER, GREATER AMBERJACK, AND RED SNAPPER

MR. RINDONE: Katie, are you still going to give this one?

DR. SIEGFRIED: Yes, and we're letting Lisa stop talking.

MR. RINDONE: All right, and so, on pins and needles, Dr. Siegfried is excited to present to you the data available on discards for gag, red grouper, greater amberjack, and red snapper, and these have been derived from all the most recent stock assessments, both completed and ongoing, for these species. This was the most efficient approach, in order to get all of this information together in a reasonable amount of time, and all of these species have been assessed in the last couple of years, and so these data are pretty contemporary.

These data are presented annually by species and directed fleet, like commercial vertical line, longline, charter/for-hire, private, et cetera, and fishing sector, and they should be -- They are presented based on the currency that they were reported in, and so whether it's CHTS or FES, as applicable, and all of these are actually in FES at this point, and so, prior to -- When this request was initially made, red snapper was going to be in CHTS, but the Center was able to work on this information for SEDAR 74 and provide it from there.

The council's purpose in having the SSC review all of these data

is to improve its understanding about the magnitude of these discards and differences between the directed fleets to assist the council in its consideration of measures to reduce future discards for these species.

Further, greater amberjack and gag are currently overfished and undergoing overfishing, and these data may help the council to rebuild those stocks, while continuing to allow fishery access, and so you guys should look at this stuff and provide a recommendation, as appropriate.

I guess, as recent as the last council meeting, the council received a presentation from Mr. Nick Haddad from the Return 'Em Right program, which is -- It's an educational campaign to inform recreational anglers, both private and for-hire, about release techniques and provide them with the gear and the means to be able to do a better job of releasing fish to improve discard mortality, and so this all kind of folds into together with the council's overarching goal of trying to look at ways to reduce discard mortality. Mr. Chair.

CHAIRMAN NANCE: Thank you. Dr. Siegfried, we're ready for your presentation. Bernie, if you can bring it up.

DR. SIEGFRIED: Thank you, Mr. Chair, and thank you, Bernie. I was so focused on gag that I forgot that I was next. In addition to what Ryan just outlined for you, I think some of what this will help you, and the council, understand more about is the difference in discarding across the fleets.

We need to pair this information with improvements and research on our projections, but I wasn't entirely sure what this request was trying to get at, until I talked more with council staff, and there may -- You know, this may not fully address what was -- What the actual intention of the memo was, but we did our best, in light of all of our other workload, and so what I'm going to show you is the discards using the most recent assessments for greater amberjack, gag, red grouper, and red snapper.

In case you needed to have the actual language of the memo -- I think the most important things are that the discards were requested annually by species and directed fleet, fishing sector, and then as far back in time as the available data allow. Oftentimes, it's more than twenty years.

I just wanted to provide a little bit of context on our response, and we do receive a lot of responses, especially this year, and we have an incredible assessment load in the Gulf and on the data

providers across the region in the Southeast, and so, in order to re-pull all of the discard data, it would have -- We would have had to delay an assessment, or take one off the books, to redivert those data folks to that task, and so, instead, what we asked was, okay, if I go ahead and just ask the analyst from each of the assessments for the time series that they put into their model, will that suffice, and so, you know, in the negotiations, or the discussions, that was deemed appropriate, at least it seems for now, though, in some instances, our fleets, or fishing sectors, are pooled, and we can't separate those data without doing a pull, or redoing a working paper, and so this is what we responded to that memo, and I will present the best that we could do.

The data were pulled by each assessment analyst in the Gulf Fisheries Branch from their assessment input files and not the model estimates, or from working papers, if I could get to a little bit finer resolution, depending on the species, and then I cross-checked these data that my staff provided with the assessment report, trying to just, you know, make sure that there weren't any issues in what we were showing you here, and I realize why you asked for this, because it's a whole lot of work just to go through each of the stock assessment reports and try to get units, fleets, and discard estimates by year. I probably need to figure out a more streamlined way to do this, and I think, with our automation, we will get there.

The units, or the fleet structures, may be different across assessments, and you will see that, and so whether we use fish, thousands of fish, metric tons, whether we use numbers or pounds, and that may differ, and then whether we group like charter boat and headboat or we just have a recreational fleet, and that may differ, but we have tried to group all commercial and all recreational modes together for you, because that seems to be a general question, is which sector tends to discard more. Then the terminal years will vary, depending on when the assessment was completed, and so they don't all come to the same terminal year.

The first species I will present today is greater amberjack. Our commercial discards for this assessment were from the vertical and longline fleets. They were available from 1993 to 2018, and they were used in the SEDAR 70 base model. The units are pounds whole weight, though it was provided, in a working paper, in both weight and numbers, which I provided here, after I cross-checked with the analyst.

The recreational discards were input as a combined charter boat and private boat fleet, as well as a separate headboat fleet, and the recreational data were available from 1981 to 2018, and they

were used in the SEDAR 70 base model. All recreational discards are in numbers and in MRIP-FES units or the Southeast Region Headboat Survey units.

What I have here, by year, in blue is the longline discards, and orange is the vertical line discards, and it's in pounds whole weight. I think the general gist here is that longline -- The longline fleet discards fewer fish, or fewer pounds of fish, than the vertical line, and then it gives you the general magnitude there.

The greater amberjack recreational discards are definitely a different magnitude, and you can compare that in the document as well as in the presentation, but this is in fish, rather than pounds whole weight, and so there needs to be more work into understanding what the assumption is about the weight of each fish that is discarded by the recreational fleet, in order to compare with the commercial discards, but, here, we have charter boat and private boat mode in orange, which is a lot larger magnitude discarding than the headboat, which is in blue, which discards very few fish, and this is in units of individual fish.

For gag, we have commercial discards from both the vertical and longline fleets from 1993 to 2019, and they were used in the SEDAR 72 base model, and you saw that today. Units are in thousands of fish, and I probably left that -- I should have included it for all of them, but there's a table in Figure 4 of the document, if you want to refer back to it.

The gag recreational discards are available from 1993 to 2019 as well, and they are used in that SEDAR 72 base model. The units of thousands of fish are consistent across-the-board and presented in MRIP-FES units and the headboat units for the recreational fleets.

In thousands of fish, our gag commercial discards for the commercial vertical line, plus other types of gears, are in blue, which discards more fish than the commercial longline, which is very low, and you see it there in orange, and then the next slide, in thousands of fish, will show that the largest contributor to discards is the private and shore mode.

Again, this is in MRIP-FES units, and I used this before all of these new requests came through for SRFS and the headboat correction, and so, here, we would have to correct this, but, as you can see, it's difficult to even tell how much headboat is discarding there, compared to private and shore, and then charter boat is sort of in between the two, though much closer to headboat than to private shore, and this is, again, in thousands of fish.

For red grouper, the commercial discards are available from 1990 to 2006 for trap gear. Vertical line and longline discards are available from 1993 to 2017, and the recreational discards are available from 1981 to 2017, and I should have added there that they are in MRIP-FES units or headboat units, and all of the SEDAR 61 discards are in numbers of fish.

Here are the three commercial fleets, and I will start with the biggest one, in numbers, and the commercial longline is in orange. The commercial trap has a peak there, in gray, in the mid-1990s, but it's generally lower than commercial longline, but, in everything but those couple of peak years, it's pretty similar to the commercial vertical line, which is in blue, and you will see the magnitude of the axis of numbers.

Red grouper recreational discards was not broken out by mode, and we just have one time series for you here, and it's in numbers, and it's quite a bit larger than the commercial fleets.

The red snapper data are preliminary at this point, and I think it was this week that was our second post-data workshop call, and we still have -- I think the deadline for the working papers is coming up, and so these data for red snapper are not yet finalized. There are three areas of stock ID for SEDAR 74, the western, central, and eastern, and the commercial discards are available from 2007 to 2019. The recreational discards are available from 1981 to 2019, and it depends on the mode, but, for those of you that participated, the MRIP Transition Team influence and the state survey influence sort of came together for SEDAR 74, and so we've got a mix of MRIP-FES units, headboat survey units, or state surveys calibrated to MRIP-FES units for our recreational discards.

There are also closed and open season discards, and all of those data were not complete at the time of this presentation and the document that you have on the server, but the ones that I had were available from 1997 to 2019, and all red snapper discards are reported in numbers, for this go-round.

I mentioned the western, central, and east because I have identified each of them, with western with a W, central with a C, and eastern with an E, and here's all the commercial discards. We start on the left with handline east, handline central, and handline west in blue, orange, and gray. They tend to be larger, until around 2014, and then the handline west and the handline east become more similar to what is discarded in the longline fleet in the east, and then the longline central and longline west are

in blue and green, and they are all in numbers.

This is our recreational discards, and I know it's busy, because we have the three regions, but we have our MRIP charter boat, our MRIP private boat, and our headboat modes here, all indicated by the east, west, or central identifier there. In general, it looks like the central region private boat mode tends to discard more overall, though it looks like the private boat in the west is coming in hot for it, and it's the second-largest magnitude, and then it looks like charter boat in the central is the next. The rest of them seem to be pretty low and pretty consistent with each other's magnitude there.

These are the closed season discards that we had at the time of writing the document and putting together the presentation. It looks like, here, our private boat mode, in the closed season, in the central region has the largest number of discards for that closed season.

The rest of them seem to be pretty consistent, and it's all sort of bouncing around there at the bottom. I could -- There is other ways to plot this, if I knew what some of the questions I was trying to answer were, and, obviously, I could eliminate the private closed in the central, to get a better idea of the other regions, but all of that kind of work can be done when we have a better idea of what we can answer with these data for you.

That's what we have in our recent assessments, and I did get help from Lisa, Nancie, LaTreese, and Skyler to pull all those assessment time series from those different assessments, and I welcome questions or any information about, you know, what these types of data can do for you in considerations in the future. Thank you.

CHAIRMAN NANCE: Thank you very much for that presentation. We've never really looked at the data like this, and it's good to be able to see that, and it seems like there's some of the fisheries have quite a large amount of discards, and I know, as Jack pointed out, or talked about, the number of deaths from these discards is different, and so, while this is the discard rates -- I think looking at closed seasons and things like that is how we -- It's good to be able to see that, so we can maybe make some comments and things on what we would be able to do to discourage that. Any questions? David.

DR. GRIFFITH: I just noticed that most of the commercial discards, over time, seem to be going down, whereas the recreational ones seem to be going up, or are much more -- They tend to fluctuate

quite a bit, and I was just wondering what accounts for that, and are there certain gear types that are, you know, being put into practice among the commercial guys to reduce the number of discards, or other kinds of fishing practices that maybe the recreational group could adopt, or is it a data issue? I'm just curious about that. Thanks.

DR. SIEGFRIED: Mr. Chair, should I just answer after, or do you want to --

CHAIRMAN NANCE: No, and you're welcome to respond to those. Thank you, Katie, for asking.

DR. SIEGFRIED: Okay. Sure, and so I don't think that I have all of the information to answer that question for you, and I think that getting the fishermen's take on how or why they may have changed their behavior, if it coincided with regulations, if they perhaps changed gear, or they changed target species, and all of those seem to be more dynamic for the recreational fleets than for the commercial fleet, at least, just in the data that I've looked at, but I would -- If there are fishermen in the room, it would be really nice to hear some of how or why they changed their behavior, and I did not line up the regulations with any changes, and I didn't line up any, you know, multispecies considerations or anything else that I would do if I had that question, to start, and so I'm not sure.

CHAIRMAN NANCE: Thank you, Katie. Trevor.

MR. MONCRIEF: Thank you, Mr. Chair, and, Katie, I can only imagine that you probably have a good idea of what I'm about to ask, and has -- Did you all look at all at any of the wave-specific effects, or the wave-specific estimates, that might be driving some of these peaks that we're observing, and, if you could, can we go back to that slide for amberjack?

CHAIRMAN NANCE: It's one more down. How about that one?

MR. MONCRIEF: Yes, and so you kind of observe peaks in 2001, and I think it's 2010, and, I mean, have you all given any thought to what might be driving that?

DR. SIEGFRIED: Thanks, Trevor. I didn't actually look at wave-specific, and I would have to look back at the working paper for amberjack, and I'm not sure if the rec folks put together that nice working paper for this or it started with scamp, and I hope you know what I'm talking about, and there's a nice new template for the working paper that goes wave-by-wave and looks at any kind

of peaks and explains the number of intercepts and all of that.

I would think that we would have to understand more from the amberjack fishermen of what time of year, meaning which wave they might have been more likely to do more discarding, if it was because they were fishing less for amberjack, or they filled their quota, and so what the reason is that they would have been discarding, and like that peak in, what is it, 2001, and, I mean, I know it was a heavy regulation time, and so I would have to really look across-the-board at what the other regulations were and what other species amberjack fishermen fished for and the timing of those fisheries in the context of the amberjack.

MR. MONCRIEF: Do you mind if I respond, Mr. Chair?

CHAIRMAN NANCE: Please do, Trevor. Thank you.

MR. MONCRIEF: So I'm looking at the numbers, and, essentially, what we're seeing is that there's huge spikes in the wave-specific estimates in given waves for Alabama and Florida and some of the other states, and so what you see is this pattern of between years you have this anywhere from three to tenfold increase in observed discards, and we see the same pattern in landing as well, but the season for amberjack wasn't implemented until 2010, if I remember reading the assessment report correctly, and, essentially, what you see is that you have relatively -- Let's call them somewhat stable fisheries, in the sense that they're not restricted by the amount of days, not nearly as they are in this recent decade, but we still start to see that pattern, in those stable fisheries, with, you know, three to tenfold shifts in discard counts and harvest estimates.

It just seems like, especially with greater amberjack, since it's not observed readily in the surveys, over time, it's one of those that is susceptible to that volatility of estimates, and it might be a good candidate to look at when we're talking about, you know, trying to figure out ways to decrease discards or anything else, and I mean, that's a clear example of we might shift regulations however we want to, and do whatever we need to do, but you might not see the effect, simply because the outputs themselves are too volatile to really observe, and then, if I could, for red snapper, and do you mind if we go down to that slide, and I'm sorry for droning on on this one.

CHAIRMAN NANCE: No, that's fine. Red snapper I think was almost to the end, Bernie. One more down. That one, Trevor?

MR. MONCRIEF: Yes, and so you had that plot, and then there was

the out-of-season stuff, and the same pattern kind of evolves as you look there. I mean, what's driving that 2017 peak is the May-June wave from Florida, which you can argue that there was some increased participation, because of season or anything else like that, but there simply weren't enough days in that time period to be able to have that large of a spike, and the out-of-season, I think -- When I look back at it, it seems to be driven mostly by a November-December landings for one state, and I can't find it right now, and I apologize, but, I mean, the gist of it is that there seems to be some specific wave pattern that is not necessarily proportional over time that really starts to drive all the volatility that we're seeing here.

The thought of deriving some regulation, or coming up with some method to be able to reduce discards, it seems like we need to, you know, tackle the first issue, which is figuring out the patterning and are the estimates produced -- Are they actually relative to the fishery and how they're operating. Thank you for that time, and I'm sorry that I took up so much of it.

CHAIRMAN NANCE: Trevor, do you think those drive spikes, or do they also contribute to trends?

MR. MONCRIEF: For me, I think, for the most part, they drive spikes. They do add into the trend over time, if you have them spotting through, but kind of what you see with amberjack -- Not only with harvest, but also it looks like with discards, is that, when you have this volatility that occurs, and it hits two states in a year, rather than just one, all of a sudden you see that observed spike, and so that 2001 -- There was elevated estimates coming out of Florida, but there was also an elevated estimate that came out of Alabama that added into it.

When this stuff hits in two states, when these big waves hit in two states, it drives a spike, and I think, given the seminars that MRIP put on, and John Foster did an excellent job of explaining the process and everything else, and everything that goes into it, and I have to applaud them for it, and they break down the variables for the estimation from APAIS and FES, and it shows some of the ratios that are used to build the estimates that are gathered through the APAIS surveys.

I think there's diagnostics there to be able to look and see what's truly affecting this, and I know it's probably too much to add onto you all's plates, and I know it's something we're looking at, as far as the transition process goes, but I just -- As we run through these and discuss them, I just wanted to bring that up, just so everybody is on the same page, or at least you all

understand my thought process, when it comes to a lot of these.

CHAIRMAN NANCE: Thank you. Jim Tolan, please.

DR. TOLAN: Mr. Chairman, after Will, and he's had his hand up for a while.

CHAIRMAN NANCE: Okay. Will.

DR. PATTERSON: Thanks, Mr. Chair. Thanks, Jim, and thanks, Katie, for the presentation. I was looking through the scope of work on this item, and so Katie mentioned, early on, that, as the Center scientists were trying to address this request, they made a decision that there wasn't sufficient time, or personnel time, available to actually go to the assessments and pull the output.

In the request, it sounds like that's -- The estimates of discards from the assessments is what the council was after, and it's not clear, as Katie mentioned, what the purpose of that data request was, but it seems to me, especially for just red snapper, as an example, the recreational, the self-reported discards, and then multiplied through by whatever effort estimate being applied, currently FES, and we had a discussion, earlier today, in Florida about gag and SRFS, and so, obviously, that changes the estimates of discards in that fishery, or it would change the estimate of discards in that fishery, but, for red snapper, the estimates of recreational discards, especially private rec discards, can change considerably. You know, they can be quite a bit different, historically, and have been quite a bit different, coming out of the assessment versus the data inputs into the assessment.

I know, Katie, you mentioned that you guys didn't think you had the time, or the ability, to pull folks away from other ongoing tasks to look at that assessment output, but I wonder if you peeked any of that, maybe even just for red snapper, to see what the difference is in the discard estimates coming out of the assessment versus the input data.

DR. SIEGFRIED: Thanks, Will. I didn't actually do that in a systematic way. What I did note, when I looked at it, was that he fits to the input discards is very different depending on which assessment we're looking at, and like, for 74, as you know, we haven't gotten to the point where we've started to fit these data. I would have to go back to the previous assessment to take a look, and so I've seen it where, you know, they're consistently underestimated or consistently overestimated, and I didn't put anything like that together.

I may have misheard you, and I hope I didn't misspeak, and we have had calls with council staff to figure out what they really wanted us to present, and I was under no impression that they wanted the estimates. I thought that it was the data that were provided to the assessment, and so, if we misinterpreted that, that's been a misinterpretation for quite a long time.

The other thing that I wanted to add to what you said, Will, is that it's difficult to look at all this and make too many judgments, because there is a lot of caveats there. You know, these are the pre-discard mortality values, and these are in different units, and so it's hard to compare commercial with recreational.

As Trevor noted -- You know, what it sounded like Trevor was looking at was the sort of wave-by-wave validity of these estimates, as opposed to what I thought the council alluded to, was that they wanted to look at the difference in discards between commercial and rec, and adding another layer of complication on that of what the estimates are, versus what the inputs are, would be a whole other can of worms. Does that answer your question?

DR. PATTERSON: Yes, and so, basically, you guys didn't really look at it in any systematic way. As far as the idea of what estimates the council is looking for, I just -- My thoughts there were informed by the text that Ryan put together in the scope of work, and maybe I was reading that too closely and thinking it was the assessment-based estimates and not just the input estimates.

Regardless, whatever the SSC decides to recommend here for the council, or to comment on the data that Katie and team have pulled together here, I think we have to be careful to note as many of these caveats as we can and just say that, you know, you can't just look at these at face value and that there are some issues or doing that, or potential issues in doing that.

CHAIRMAN NANCE: Thank you, Will. Point well taken. Jim.

DR. TOLAN: Thank you, Mr. Chairman. I too would like to thank Katie for her presentation, and I think, from a regional perspective, and a by-mode perspective -- Or not by mode, but by-fleet perspective, it really opens you up to where a lot of this discard mortality is coming from, and the question that I have has to do more with the scale, and it's not going to change the pattern at all, but I just wanted to be clear that, for some of these fish, the scale is eight to ten million.

These are some pretty big numbers, and so I don't have much

experience fishing for gag or red grouper, because I'm on the Texas side of the Gulf, but ten-million red grouper? Is that kosher? The red snapper numbers, I could probably see, but, even for the highest years, if you add them up together for some of these fleets, you're still not pushing ten-million fish, and I would think the biggest numbers would come from red snapper, but I just wanted to make -- Again, it's not going to change the pattern and where it's coming from, but I wanted to make sure the scale is indeed correct. Thank you.

CHAIRMAN NANCE: Any response? Go ahead, Katie, or, Luiz, anything? No? Okay.

DR. SIEGFRIED: I don't think it solves anything that Jim just asked, but I did double-check that scale, because that occurred to me as well, and I wanted to make sure that I wasn't missing something, and I wasn't there for the full red grouper assessment, but, you know, the scale will drop because of discard mortality, but this is still the data that are being provided that are put in before that discard mortality decrements the data, and so, like I said, that's not helping your concern, Jim, and I'm just adding to the conversation.

DR. TOLAN: Thank you, Katie. I'm glad you looked at that.

CHAIRMAN NANCE: Okay. Yes, Jack.

DR. ISAACS: This is just kind of a human dimensions thing about the mortality, and it might be -- This is kind of far afield from what you're talking about here, but I thought I would bring it up anyway, because it might be interesting. It could be interesting to assess anglers' perceptions of the mortality rate.

We did this, in the last year or two, in Louisiana for seatrout, and we found that a significant portion of the fishing public were more pessimistic about the mortality rates for those fish, among discards, than our biology leads us to believe, and that, in turn, seemed to influence their willingness to support, or oppose, a tightening of the regulations for seatrout if they thought that a large number of the fish that they threw back were going to die anyway, and why not let them keep them, and so that could be interesting, if you're moving forward with these species, to try to keep that in mind too, is the acceptance among the public for that sort of thing.

CHAIRMAN NANCE: Okay. Thank you. Trevor.

MR. MONCRIEF: I've just got two more comments, but have you all

looked at the correlation between landing and discards? I know that was talked about to be assumed for stocks outside of red snapper, to a degree, and has there been any investigation of that relationship?

DR. SIEGFRIED: I didn't look into that for this data pull, except for to see, in the most recent working paper, that there was a comparison, and I think it might have been for greater amberjack, but I didn't pull those together. Sorry, Trevor.

MR. MONCRIEF: Yes, and I don't think it was part of you all's -- I was just wondering if there was something, at some point, that had been looked at. I mean, one of the reasons I bring it up is, with amberjack, we had a -- Mississippi had a huge landings number that was up to like 300,000 pounds, and we had zero discards associated with that time period, and it was just because there was a limited number of surveys that we counted just harvested fish, but it was extrapolated out.

Then the other question I have would be is there any reason why there would be a difference between the pattern that I'm observing, or that was provided in the table, and what I can observe on the MRIP query? My specific question would be to gag grouper.

The observed peak for gag for discards looks like 2017, but, in the table, it's 2016, and I wasn't sure if there was something that occurred there, and that might not be something you can answer off the top of your head, but I was just trying to go back and look at the data that was available, and it looked like 2017 was the peak, because of the single-wave estimate that was near 1.6 million, and that was three-times higher than the other estimates, but do you have any idea of what might have occurred there?

DR. SIEGFRIED: I can take a look at it in the presentation, and I thought that the -- You said for gag recreational? It looks like it's a 2016 peak, but I will check the document again. Thanks.

CHAIRMAN NANCE: Any other discussion on this item? I think it's interesting, you know, and I think it brings in some points from each assessment. As we look at the stocks, we need to pay attention to discards and where they're coming from and the magnitude. I think, while we see it on each assessment, sometimes, when we're kind of comparing -- I don't really look at it like this, but some of these trends are very telling, from a sector standpoint. Mandy.

DR. KARNAUSKAS: Thank you, Chair. Just quickly, to kind of add to some of the comments that have been said, and I'm still not sure what the council is looking for in this request. I mean,

according to the scope of work, we're supposed to assist the council in its consideration of measures to reduce discards, and I do appreciate the information that's been pulled together by the Science Center, but, in my mind, this information just really isn't sufficient for us to be able to make meaningful progress into reducing discards.

I mean, it tells us that recreational discards are very large, or they can be very large, and they fluctuate from year-to-year, but, other than that, I'm not sure what advice we can give the council.

In my mind, to meaningfully reduce discards, we need to understand fleet behavior, why people discard, what drives them to discard, and then think about what sorts of management flexibilities would lead to, you know, incentivizing fewer discards, and I think that you would need to explore some novel data collection and management flexibilities to really get at that.

I recall, for example, a presentation, and I think it was given to the SSC, if not the council, by the Science Center for a pilot study, an exempted fishing permit, to get some additional data from the private rec sector in trading for additional fishing days out of season, and that was by Zander Gordon, and so approaches like that, where we can actually get the data that are going to tell us why people are discarding and look into flexibilities that might help reduce these discards. Other than that, I'm not sure what advice the SSC can give the council, based on this information. Thank you.

CHAIRMAN NANCE: Thank you, Mandy. Tom.

DR. FRAZER: If we're done with this topic, I was just going to go back to something, and so I'll wait.

CHAIRMAN NANCE: Okay. From my perspective, I just think this gives me a pause, in the fact that, while we make recommendations, scientifically, we need to be looking at -- Be looking at where we could make recommendation of discards and things like that, where to look, and maybe give some advice of, if we can, how to reduce those things and that type of thing, but certainly it's telling to be able to see these numbers, but I'm not sure what we can, as a body, recommend. Katie, I appreciate you bringing this to our attention. Jim.

DR. TOLAN: Thank you, Mr. Chairman. Just a real quick sidenote, as it relates to a bunch of these species, and I made this point the other day, in our red snapper call, that, the more we look into the discard mortality numbers, and the more good science we

have about it, the more those numbers creep up and up and up. Every single time you do an assessment, they get higher and higher, all the time, and so some of these numbers, while they took me aback, I'm not all that surprised by them. Thank you.

CHAIRMAN NANCE: Thank you. Katie, I appreciate your presentation.

DR. SIEGFRIED: Thank you, Mr. Chair.

CHAIRMAN NANCE: Tom, on a different issue.

REVIEW: ALTERNATIVE MODEL RUN FOR SEDAR 72 BASE MODEL USING FLORIDA'S STATE REEF FISH SURVEY (CONT.)

DR. FRAZER: I just wanted to -- I am trying to think about a smooth transition from the information that comes out of this meeting and the council meeting in August, right, and so, with regard to the SEDAR 72 kind of base model runs, so I recognize that we have a motion, a couple of motions, on the table, one that says that the SSC is going to recommend an SPR of 40 percent and then use the SRFS data stream and then consider a number of rebuilding plans, right, and so -- But, because -- All of that will feed, ultimately, into the assessment, but, in the short term, right, we're forced with this situation where I think the council is going to have to make a decision on an interim rule in August, in order to get it implemented in time for 2023.

In order to do that, by the end of this meeting, there probably will have to be some specifics with regard to the catch advice, like what is the OFL that's being recommended, and the ABC, and what would -- Under the various rebuilding times as well, and so, anyway, I didn't want to leave this meeting and all of a sudden get to the council meeting and realize that we don't have that information explicitly here.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: Just to that effect, what we did at the last meeting, or, well, I guess in January, when you guys looked at this last time for the MRIP run, with the 660,000 pounds, or it was actually 661,901, when not rounded, but anyway, and that was the yield recommendation which corresponds to F rebuild, which corresponds to the ABC.

The current management is that the ACL is equal to the ABC, and then the sector allocations work their way down from there, and so, for the interim rule, none of that was adjusted, but Dr. Frazer is right that, to make the rebuilding plan, we need an OFL, and I

think Lisa is working on pulling some of that stuff together now.

CHAIRMAN NANCE: Did you send a note to her to do it? It seemed like, when we last talked to her, we left her with not anything to do tonight.

MR. RINDONE: Right, as far as like creating new projections or anything like that, but, again, the yields that she showed you correspond to F rebuild, which corresponds to what the ABC would be.

DR. BARBIERI: If I could interject here real quick, she does have OFL projections for F 40 on Slide 36, and so that we have.

DR. FRAZER: So the OFL projections in the F zero one, and the OFL projections, it looks like, are the same as they are for 2023 or whatever, the next year, for all of these, and so those yield streams are OFL, and it's not ABC, and that's how I am interpreting this, but I could be wrong.

DR. BARBIERI: Slide 36 is that 420,000 pounds for --

CHAIRMAN NANCE: Katie, to that point.

DR. SIEGFRIED: If we could pull up that other presentation.

DR. FRAZER: I'm not sure what it is, but I just wanted to make sure that we have the numbers.

CHAIRMAN NANCE: Let's go ahead, and we're going to take a fifteen-minute break here, and so we'll come back at ten minutes to three, and so 2:50, if my math is correct, and then we will come back to this item and what we need and how we move forward. Thank you.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: We're back from break, and we appreciate everybody being on. What we were talking about, right before the break, is to make sure we had the correct numbers to be able to go to the council with. We've got our F rebuild numbers, and we've asked the Center just to confirm what we think they are. Right now, it looks like it's Slide 38, isn't it?

MR. RINDONE: 36 is the OFLs, and 38 is the F rebuild.

CHAIRMAN NANCE: Thank you. Go down to Slide 36, and so OFL projection, with what we're recommending, is 2023, and so it's 0.42 for yield on OFL, and then, on Slide 38, the ABC would be

0.39.

MR. RINDONE: Lisa is working up the non-rounded values for these, if you guys would like to use the non-rounded values, given how small these are in the initial years. Typically, the SSC doesn't make catch limit recommendations beyond five years, and the expectation should be that the SSC should expect the council to request interim analyses at some interval, either annually or every-other-year or something, and I think that's a reasonable expectation, and then the next assessment of gag comes up in a few years, and I can look at the SEDAR schedule real quick and tell you when that is, but, obviously, there is some delay between doing the assessment, reviewing it, and then implementing management.

CHAIRMAN NANCE: Okay. Thank you, and so we've taken care of that. Go ahead, Ryan.

MR. RINDONE: Bernie, can you -- Somebody has got their hand up, and I will stop talking.

CHAIRMAN NANCE: Doug.

MR. GREGORY: Thank you. I just want some clarification. I thought we -- The motion earlier recommended three different scenarios that the council could choose from, and I didn't realize it was recommending a specific scenario of ABC rebuild. What did I get wrong here?

MR. RINDONE: Doug, you're correct. It's three different scenarios. We're just using Tmin times two as the example here, and so, under Tmin, where fishing mortality would be set equal to zero, the yield is zero, and so the ABC would be equal to zero until the stock had rebuilt, in either twelve or thirteen years.

Under the Tmin times two example, if the council were to choose that, under the SRFS run for F 40 percent SPR, the OFL would be equivalent to approximately 420,000 pounds, and then the ABC to 390,000 pounds, and that ABC corresponds to F rebuild, and, right now, the council has the ACL set equal to the ABC, and so, at least for the purposes of the interim analysis, if the council goes with Tmin times two, which would be expected, and that's what they were going to go with the last time, then the ACL would be set equal to approximately 390,000 pounds, and then it would be divided up, thereafter, based on sector allocations and all the rest of it.

MR. GREGORY: Thank you.

CHAIRMAN NANCE: You're welcome. Katie.

DR. SIEGFRIED: Thank you, Mr. Chair. Ryan might have gotten to some of these in what he was just saying, and I apologize if I say it again, because I'm doing too many things at once, but so the first question is, okay, you have that one value from 2023 for the scenario of Tmin times two, and Lisa can produce that value for the other two scenarios that were in the motion, and it looks like she's doing that now, based on our conversation, and so it seems like a table might be best to accompany that motion, or to -- For the SSC to just have in their documentation.

MR. RINDONE: Yes, and I will put that in the summary too, Katie.

DR. SIEGFRIED: Okay, and then how many years? That is couched in another question about interims, but we often don't just provide, you know, the 2023 value and you all take that and then that's it. Obviously, there is sometimes averaging over some years, but it sounds like the interim will probably be requested each year, and we've already gotten a request for this interim, once this rebuilding timeline is set up, because we have to figure out how to -- Which index to use and how to parse out that spatial data from the video index indices. Is there -- Would the table need to be like 2023 to 2027, just so you have all those years that we typically provide, or is 2023 sufficient?

CHAIRMAN NANCE: I think, Katie, go ahead and do 2023 to 2027, because that would give us that range that we typically look at from an SSC standpoint.

DR. SIEGFRIED: Okay, and then, sort of to what Roy was commenting on before about the red tide, the potential impact of red tide, I assume that our interims would be able to detect a drop in the stock due to something like that, whatever type of episodic mortality it was, and is it safe to assume that we'll be getting annual requests for interim analyses for gag until the next assessment, and, if so, how quickly is a new yield value able to be put into place from that, just so we can get timing of all of the different data sources that we need to consider?

CHAIRMAN NANCE: Dr. Frazer.

DR. FRAZER: I think it's a pretty safe assumption that you're going to get a request from the council for a regular interim analyses for gag.

CHAIRMAN NANCE: John.

MR. MARESKA: Katie, these values in these tables, are these in

metric tons or pounds?

DR. SIEGFRIED: Lisa, are they -- I think they're thousand pounds. It's looks like she's muted. Million pounds. Thank you, and so the yield, the second-to-last column, is in millions of pounds.

EXECUTIVE DIRECTOR SIMMONS: Is that gutted weight, Katie?

CHAIRMAN NANCE: It's usually millions of pounds gutted weight, I think, yes, but Katie can verify that.

DR. SIEGFRIED: Yes, it is.

CHAIRMAN NANCE: Carrie, do you have a -- Yes, please.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair, and so, regarding the interim analysis, I think, because we have so many moving parts, and we now have the SRFS rerun, and one thing that we may be asking for in the near future, and came up with at the council meeting in June, is asking for a health check, just looking at that fishery-independent index, or a couple of them, if you have those for gag, and letting us know which way the stock is going, or that is trending, and we did talk a little bit about that, because the council will just be putting in place, hopefully, those interim rule measures and then working on that rebuilding plan, and so we may not tie that first interim analysis with catch advice, but we'll be working on that letter, and I know that a lot of folks are interested in seeing and hearing what's on the water, hearing that, that the stock is recovering, and I think it would be nice to see that fishery-independent index in the fall, if we could, or indices. I'm not sure what we have for gag.

DR. SIEGFRIED: To that point, Mr. Chair?

CHAIRMAN NANCE: Yes, please.

DR. SIEGFRIED: Thank you, Carrie. I appreciate that, and I think what it sounds like it will be safe to assume is that we should just plan on performing the interim for gag each year when we're able to get those indices, the data completed and the indices computed, and I think the response to the council, for the last request, said that the data -- It might be because of problems with 2021 data and personnel issues, but that those data aren't available until November, and I'm looking back, but, whatever that memo response said, we can plan on doing an interim each year at the same time, and whether it's a health check or it's used for updating management advice, and, I mean, it's a rebuilding stock, and I assume that we want to keep up with the health of it too,

and so that's assumed.

CHAIRMAN NANCE: My understanding is the reason that it hasn't been produced yet is we hadn't decided on the units that we were going to do the rebuilding plan in, and the council was working on the interim rule, and so, once those decisions were made, then we could put an official request in, with here's the ABC, and ask for revised catch advice, and the allocations and all those types of things are kind of up in the air, and so that's why that wasn't able to be produced yet, was my understanding, and so, yes, if you guys could do something in the fall, when those fishery-independent indices would be available, I think that would be great, because we're looking at some dramatic cuts, and I think people are telling us they're catching more gag, but, you know, the quotas are still not being filled, based on what we have on the books right now.

I think, if it's going up, that's good news, but maybe not trending up as high as everyone else is seeing on the water, or it is going back down, and I think that would be very useful information to have, as soon as we can, and help us convey some of this information to the council and the public.

CHAIRMAN NANCE: Katie, is the values you look at the same as we use for red grouper, and so they would be done about the same time?

DR. SIEGFRIED: I'm looking back at the response to the council request, and so the indices for gag -- There is the issue with the combined index that incorporated Panama City, Pascagoula, and the Florida state folks' survey, and, right now, there is even a procedural workshop to understand better how to combine those, and gag used them individually, rather than a combined index.

The request we got from the council said please investigate which index to use, in preparation for this interim, and that is what -- We're waiting for the data to be completed from all three of those regions, those survey sections, so that we can figure out how to best replicate the index that was used in the gag assessment that we then can use for an interim, rather than the whole, and so it's different than red grouper, because it's not the combined index.

CHAIRMAN NANCE: Okay. Perfect. Thanks for that explanation. I think it's -- Both of these species, I think you can count on an annual request to be able to do that, and I think it's coming up with the index that's a good representation, so we can take a look at that each year. Trevor.

MR. MONCRIEF: If I remember correctly, the independent index for

gag have limited observations and so it would be interesting just to keep in the back of our minds of when we start seeing increases, or decreases, how looking into it and seeing, because there is such limited observations, how representative it might be.

CHAIRMAN NANCE: That's a very good point. It would be good to be able to track what we think is happening with what is happening. Absolutely, and I think that's why we have those annual reviews, so we can take a look at that. Harry.

MR. BLANCHET: Thank you. I just wanted -- Talking about people seeing a change, in terms of the numbers of fish being taken, or on the water, when you say that, a lot of times, what we're talking about is maybe a change of people will think of it as, you know, it's somewhat better, or it's somewhat worse, that it was a year or so ago, and the status of this stock, right now, is at about the same level as red drum in some of the early assessments and red snapper in some of the early assessments.

In other words, in the tank, and, for this stock to recover, where there is currently one pound of spawning stock biomass, there will have to be something north of ten-times that biomass of spawning-age fish in the water for that recovery to occur, and so I think that, in terms of perspective of where we are, it's hard to comprehend, easily, just how much different that stock is going to have to be than where we are currently, and we have certainly seen changes in red snapper, in terms of distribution, abundance, size structure, et cetera, to say that this is possible in a Gulf of Mexico stock.

However, this is not something that we have seen in a very long time with this species, and so I think that the scale of where we need to go needs to be emphasized, if this assessment is anything near correct, and I see no reason to believe that it's not.

CHAIRMAN NANCE: Thank you, Harry. I appreciate all of those comments and discussion this item. We'll go ahead and move on to Item Number VII, a Decision Support Tool for Evaluating the Impacts of Short and Long-Term Management Decisions on Gulf of Mexico Red Snapper Resources. Ryan, go ahead and do the scope of work, please. We have Dr. Zhang, and we have her with us today to be able to present this. Ryan will do the scope of work, and then, Dr. Zhang, we'll turn it over to you for your presentation.

PRESENTATION: A DECISION SUPPORT TOOL FOR EVALUATING THE IMPACTS OF SHORT AND LONG-TERM MANAGEMENT DECISIONS ON GULF OF MEXICO RED SNAPPER RESOURCES

MR. RINDONE: Sure, and so Dr. Zhang is here to talk about this decision support tool for evaluating the impacts of short and long-term management decisions on the Gulf of Mexico red snapper resource. This too employs a management strategy evaluation conducted through computer simulation to evaluate the effects of management decision and their effects on the stock and its stakeholders, and the purpose is to improve the evaluation of management decisions, with the goal of making progressively better decisions in time. You guys should consider the information that's presented, ask questions of Dr. Zhang, and make any recommendations, as appropriate.

CHAIRMAN NANCE: Thank you. Dr. Zhang. Thank you.

DR. YUYING ZHANG: First, thank you for the invitation. My name is Yuying Zhang, and I'm an Associate Professor at the Florida International University, and, today, it's my honor and pleasure to introduce our new tool, the decision support tool for the Gulf of Mexico red snapper.

I'm sorry that, after a long day of discussion, that everybody maybe wants to have dinner, but I still need to hold you here, but I will try to make it as fast as possible. Actually, a couple of years ago, I was here to introduce this tool, but, at that time, it was just like a design, and, right now, we have already finished the development, and we are wrapping up, and, this summer, I am writing the tutorial, the support documents, and the manuals, and I think we will officially release that in 2022.

First, I want to introduce the team for that, or, actually, the collaborators and my university team provided a lot of help. Dan and Matt, they are the stock assessment scientists of the red snapper, and Laura Picariello of the outreach, Dr. Yong Chen with a lot of help in the scoping and design and is right now helping us to promote the use of this tool. Luiz gave us a lot of suggestions with management, and Chris helps with the workshops on the east coast, and Juan gave us a lot of suggestions on the socioeconomic components.

Actually, there should be a post-doc here. However, because the market is so hot, we have two -- We still cannot find the right person, and so I'm doing the whole programming, with my programmer, and so I know every detail of this tool. If you have any questions, just shoot me an email.

Today, I think I only have thirty minutes to introduce this, but, on July 26 and August 7, we will have two workshops, half-day workshops, one in Galveston and one in Tampa, here, and so, if you

are interested, please send me and email, and I will give you the detailed agenda, and everybody is welcome to join.

Also, I think, in 2017, when this project -- Before it got funded, the director kept asking me why I chose red snapper, and, at that time, because Dan and Matt -- When they helped me polish my proposal, they used the words "controversial and contentious", and so I think a fish like that -- It's worth it to have a customized MSE for them, and that's why were motivated to get this project, but, actually, my ultimate goal is to develop a multispecies MSE, with the ecosystem-based management included. However, as the first step, we cannot go too big, and so let's do the single species first, and then we will move step-by-step.

Okay, and so, in 2017, the NOAA RESTORE Act funded management decision support tools, and mine is one of them, and so, to be more specific, mine is an MSE tool. MSE, and everybody here are experts, and so there's no need to explain what that is, but, in case someone doesn't know that, we recorded a very detailed video and put that on the website. If you have a smartphone, you can just scan the URL, and you will get that.

The core of MSE is the simulation, and the simulation itself is not difficult, and so I develop many models, like stock assessment models and the Bayesian models, statistical models, ecosystem-based models, and so those models -- You need to like tune the model at the end to get the model converged, and, to be frank, for me, 50 percent of the time, my model cannot converge, but, for the MSE, it's not that difficult.

Sure, you just -- Like a witch, you put all the medicine into your hotpot, and it eventually will give you something, and you just wait there and see, and so, like for the MSE, we just preset all the constraints, and it will run it for like one generation or like fifty or 100 years.

Although the MSE is not difficult, it's really complicated, and so there are many components that we have to take care of. For example, like the red snapper, we know it's so complicated, and so, in addition to the common -- The biological reference points, harvest control rule, and people like you guys may be more interested in like the allocation among the fishing sectors, among states, like what is the size regulations, and what is the fishing season, and so all of this has to be considered.

Then you may also be interested in like OFL and ABC for this, and, also, when you implement those strategies, you need to think about all the uncertainties, and it's like the observation error and

process error and implementation error and assessment error and so on, and so the fisheries scientists provide fishery managers the results of the MSE, but, the managers, they may not pick the best one. They may pick like the most robust one. That means that, if something goes wrong, that the fishery may not go too bad.

Now you can see that we tried to incorporate as many uncertainties as possible in this tool, and, also, for the output, and so the total catch, the catch variation, the SSB at the end of your management period, and the lowest SSB, those are the things that the performance measures will care most, but, in addition to that, there may be others, and so, for example, we tried to add like a socioeconomic performance, to see what the landing value could be.

Unfortunately, we find that some historical -- The price, and I know that we find that the price is not highly correlated with the demand. That means that, the more you catch, it seems like the price gets high, and so I was told this may be because the red snapper is highly affected by the imports from Mexico, and so that is some direction, and we can work on that in the future.

Now many people always ask me like what are the advantages of your tool comparing to competing tools, and, first, I want to say that I'm not competing with anyone, and we are all contributing to the fisheries management, but my tool does have some measures that other tools don't have.

First, I will talk about the model structure. Our model, the main code is written by R, and my programmer keeps asking me why I didn't use C, because C is much faster, and the reason -- Actually, have C as early as 2011, when I developed MSE for the tuna, and I already had C software, and it's very quick, but the reason that I choose R is because many fisheries scientists are familiar with R, and we wanted them to use this as long as possible, and so that's why I chose R.

The second reason is because the MSE is based on the official stock assessment model, and we have the R package that can read the stock assessment result, and so I want to utilize that, and so that's the main reason we use R, and then my main model has been sent out to NOAA Fisheries scientists, and they are kindly helping me review that, and they agree that this tool is factually correct and consistent with the council management framework.

In the future, if the stock assessment gets changed, or some management procedure gets changed, we can work together to modify the main code to make it continue working and update it.

I will go back to the model structure, and so this is -- The first side is the conceptual flow chart, and all MSEs work from this reference, but, actually, in the middle side, this is our flow chart, and it's more complex than that. It's so complex that you cannot see the detail, and so I put another URL here, and, also, this flow chart is on our website for you to examine.

Actually, this flow chart has already been simplified. For example, Ryan and I discussed the details about the carryover and the penalty, and, here, I didn't indicate that clearly in the flow chart, because some of the alternatives, preferred alternatives, haven't been released yet, and so, once it becomes management, I can upload my flow chart, to make it updated, but, right now, all these preferred alternatives have been embedded in the code.

Another thing I mentioned is so this is consistent with the management, and so I will give you some examples. The first is the OFL and ABC, right, and so, in our tool, you can test the different probabilities of this overfishing, by changing this -- Right now, the default is forty, but you can change that. By the way, the http://gomredsnappermsetool.flu.edu is the URL of our tool, and so you can go there and try it, and, if the glossary is not friendly to use, we have a glossary to list all of them.

The second example is about the assessment error, and, to be frank, many MSEs are not complete, and they don't consider assessment error. I am not blaming other people, and, also, my publication for the tuna work didn't include assessment error, and so let's see the concept.

This is the basic concept, and so what are those imperfect MSEs always missing? They are usually missing the lower part, and so the difference is, for the imperfect MSE, they also come from the biological reference point and harvest control rule, but, when they get input into the operating model, they just are projecting for like one generation or hundreds of years, but, however, this part is missing the feedback component.

Usually, the full loop should be the general data from the simulated fishery, and you just estimate and update the parameters and then go through this process again, and so, to be consistent with the stock assessment and management, for example, if you use stock assessment that goes every three to five years, then, in the management, when you mimic it, you also have to simulate it, to have that every three to five years.

Then what if your stock assessment is not perfect? Then this is the place you should apply the assessment error, and so there are

two ways to apply the assessment error. One is the full MSE, and so this is to strictly mimic what the truth is. Like, for example, if a stock assessment is SS, then you call SS every three to five years, and then you update your parameters.

This, of course, is very good, but it's very, very, very time consuming, and so another shortcut MSE is that you can assume some stochastic process and incorporate this assessment error based on some historical experience. The good thing is that it can save time, but, in cases there is some parameter that has never come before, you may not consider that in your simulation.

Right now, our tool is built on the shortcut MSE. The main reason is that I tried to save the computing time, but if, in the future, we want to incorporate it, to call SS, it's just very easy, and it's just changing some code, and then we call the SS stock assessment model.

I also mentioned that we integrated the carryover and the penalty, and so this box mainly comes from the generic amendment, and it's about like 184 pages, and we summarized that, and so our constraint -- This is the main constraint, but our constraints are not limited on this, and we have more.

Briefly speaking, for the carryover, we have three options. The first is no carryover, or there is some carryover, but the carryover will only apply to the sectors and components who did well in the previous years. Then we also make sure the ABC won't exceed the 95 percent of OFL, or it won't exceed 50 percent of the difference between the ABC and OFL.

As for the penalty part, we have two, and so the first is no penalty, and the second is that we tried to be consistent with the 2015 amendment, and so, in the amendment, they say, because red snapper right now is under some rebuilding plan, and so that's why -- Our default is that, before 2032, we will have this rebuilding plan and we will have a penalty.

Last week, or, actually, last month, Mike Drexler and I tried some analysis, to see if each state -- If they increased their catch like 50 percent or more, what would be the consequence, and, to our surprise, this penalty can help protect this fishery, and so, if you guys are interested, I can demonstrate to you what this would look like.

Then, also, to be precautionary, we also consider those buffers when estimating these ACTs, and so, because of the IFQ -- So our default buffer for the commercial sector is zero, but, for the

federal for-hire and the private angling, we give them the different -- Like 9 percent and 20 percent default buffer.

If the end user is interested, they can try other combinations, and, last month, I sat in on the Gulf Council meeting, and I am very happy that my setting is the same as what it is, and this is because my collaborators -- They are all experts, and so they gave me a lot of information to make it consistent with the management procedure.

Now I have finished the first advantage, which is our model structure, and then the second advantage is our user-friendly interface, and so our end users have a very broad spectrum, and so someone can have no background on MSE, and someone may be like an expert, and they just isolate themselves in a room for two weeks, and they can develop their own MSE, and so, for those two different -- For people with different backgrounds, we're thinking how to give them the features to convince them to use my tools, instead of developing their own.

For people with few or little background, this user-friendly interface can help them a lot. As you can see, the process is so complicated, because the management of the red snapper is complicated, but we kind of make them into groups, and each group we try to make as simple as possible. From this page, you can see this is the simple list, the input, that we designed for the people with no background.

We have designed about seven management options, and so they are either allocations or regulations or like penalties, and so we just kind of sorted them, and then they can also try different combinations of the natural mortality and the recruitment scenarios, and, as for general input, we just set it as a default from the stock assessment. By the way, this is the simplest one. Later, we will have a professional version, to give them something different to try.

This is what the default assessment looks like, and so now we will move on to a professional version, and so, in the professional version, the management option -- The seven ones are the same, but the difference is, from natural and recruitment, they will have more scenarios that they can choose from, and then, from Step 1 to 5, that's the input from the stock assessment, and so this is automatically reading from the official stock assessment.

I will give you a picture of what does a general input look like, and, so for example, the last stock assessment ended in 2016, and so, right now, the projections automatically started from 2016,

and we assume that we will have a stock assessment every three years, and that's the default, but you can change it, and then, because we consider uncertainty, you can see the results is from 100 runs, or more runs, and you can set the observational error for the distribution and so on.

For this biological reference point -- Sorry. Biological parameters, and they are just read from the latest stock assessment, but, if you do not agree with that, you can also modify that, and so we give the end users a lot of freedoms to modify.

Then it was input, and you will have the output, and so we use very powerful data visualization tools to create more than twenty figures for each scenario, and so, for example, like this one is the -- It's from the line gradient chart, and so this one can show you to compare what does the total annual catch and SSB look like, and, of course, we have a very classic Kobe plot, and, by the way, those plots are dynamic plots, and so that means, when your mouse to these charts, it will show you what the data looks like, and so this is very convenient when you compare among different scenarios.

Now we use, for example, some -- We use these like stepped lines, and then we use some bars, and, in this version, we use the shaded area to indicate the uncertainty, and so all of this can give you the results of the management in different perspectives.

Another advantage of our model is we can compare different scenarios. For many other tools -- Like, if you close it, the result cannot be saved, but, in our model, everything is saved there, and, another day later, you come back, and it is still there, and you can compare your scenarios with other people's scenarios, and so, for example, we give them the features that they can select the scenario and compare horizontally, and then we use these lines and a radar plot and a bar plot to compare them.

Our tool actually provides a platform for the end users to communicate, and so there are several ways they can do it. The first is through -- I mentioned that I have two versions for them to try, and when they save the results, and so all these features are typical for registers, and so, when they register, they can save twenty scenarios.

When they save twenty scenarios, with this feature, they can show three scenarios to the public, and so, for example, if I turn this off, even if you're not allowed in, you will see this scenario, and you can compare this with yours.

Then, when you compare results, you can download the PDF, and so

there is two formats of PDF, and the first is, if you just show the results of one scenario, the first part is the output, what does the figure look like, and the second component is what your input is. Here, if this input is not the same as before, we use a red color to highlight that, and so then the people will know what the consequence of the management strategy and why it caused that.

If you are comparing multiple scenarios, we also highlight the differences of these scenarios, and so this gives people a more convenient way to compare, and then we designed three goals Previously, what I mentioned is typical for a register, but, for some people, they really care about their privacy, and they don't want to register, and it's still fine.

If you go to our website, you can just -- The default setting is like you login as a public user, and a public user can also create a simplified MSE scenario. The difference is they cannot save it. The scenario will be automatically deleted after twenty-four hours, and so that's -- Because we encourage people to try, and then we encourage them to register.

We want to collaborate with the fisheries scientists, like NOAA Southeast Fisheries Science Center and the council people, and so, for those users, if they become like the administrator, we give them more authority. For example, every several years, when they have a new stock assessment model developed, they can just update the stock assessment model, and then everything in the backside, the projections, will be updated. Also, as an administrator, they can just have different features, and just delete all or add more users.

One more thing that I forgot to mention is we also spent a lot of time to avoid some error, and so, for example, if someone starts a new scenario, and they run it, and then, the second time, they change some input, and they close this website, or maybe, when you run it, the website just has some error and it disappeared, and so, in this case, in the database, your input and your output might be different, and so we spent a lot of time on that. In our tool, in case this happens, your scenario name will be highlighted by yellow, and so that means it will give the end user a reminder that you have to rerun this scenario.

The advantage of our MSE tool is every component is independent, and so, for example, the website is written by Python and Linus, and the database is written by the MongoDB, and this is a new generation, the database, that can get at the scenarios, get at the results and the input pretty quick, and we have the user-

friendly interface, and it's written in JavaScript and html. Then the operating model -- We used R, and, also, in the future, when we use the full MSE, we will call the SS.

In the future, if the stock assessment scientists -- If they want to modify -- If it's slightly changed, we just can modify R. If, for example, some database changes, then we can add some things in the MongoDB, and then, if the user-friendly interface needs to change, then we just use html to write some new features, and so this is very flexible, and it's expandable.

Now another advantage that I want to talk about is the computing time. As I mentioned, many fisheries scientists don't integrate the assessment error, not because they don't want to, but it's because, if they do that, it will dramatically increase the running time, and so what we do is we set a parallel computing. I can give you an example. Without considering the assessment error, each run takes like one minute, but, if you count in the assessment error, even if there's a shortcut MSE, it will increase the time to be twenty-five minutes.

I don't think people will be very interested in the tool if it's twenty-five minutes, and so what I do is, after setting this parallel computing to the maximum, the sixteen CPU, it reduces the computing time from twenty-five minutes to five minutes. In the future, if I can -- For example, if NOAA, or some other institute, can host this tool, and it gives me, for example, like a 100 CPU, it will reduce the computing time to be less than one minute, and so this one way. Then the second way I'm thinking to save time is, because there are more and more people that use this tool -- My design is, for the people first to run this, it may take five minutes, but, if the second people use that with the same input, it will copy the result from the first guy, and so the result will come up in less than one second.

The advantage of that is, right now, at the beginning, it may take time, but, me, as a PI, I can run it in my spare time, like solve it enough times, solve enough scenarios, and, as more and more people use our tool in the future, the computing time will be dramatically reduced.

Although our tool hasn't been released right now, there is work that has already cited our work, and so, for example, this is a National Academy book that came out in 2021, and, in the Chapter 5, pages 154 to 156, it cited this, and, also, my collaborators have written some of their work, and they already cited this work.

The reason I came here is because I want to promote the use of the

tool, and I also want to let people know this tool and start a collaboration. There is several ways we can do that. The first is, previously, I mentioned that our tool can compare several scenarios, but I was ambitious, and I was thinking to let it compare thousands of scenarios. For example, you may run thousands of scenarios, and you just project the catch and the SSB, to see what they look like.

To tell you, in the past year, I spent a lot of time on that, and this function does work. The problem is each run takes five minutes, and, if each run takes five solid minutes, it cannot work. Plus, the server -- If you stop connecting, it will drop, but this work is already there, and, in the future, when we have enough scenarios saved there, I can unhide this part to the users, so they can use it.

The other ways that we can use -- For example, we can do the customized MSE for all these commercially-important species, although I have devoted myself here, but I cannot do it for all species, and so, if some researchers -- If they have some MSE tool, they can utilize my framework, so they don't have to spend a lot of time on the interface or that part, and we can work on that together, or we can work on the multispecies MSE for the ecosystem-based fisheries management, and, also, we can develop more visualization tools, to give people more insight, and we can also provide this platform for stakeholders to communicate.

This is just a brief introduction to my tool, and so I would like to thank Frank and the NOAA RESTORE Act and John, and he is the technical monitor of this project, and he gave me a lot of the suggestions. Then Ryan helped me with the complex process procedure. LaTreese and Nathan gave their suggestions too, and all these other programmers who contributed to this project, and I appreciate everybody here listening to my tool. If you have any questions, then just ask me.

CHAIRMAN NANCE: Thank you very much. We appreciate that presentation. Any discussion or any questions from the SSC? Luiz.

DR. BARBIERI: Thank you, Dr. Zhang. I mean, this is very, very nicely reviewed, but, just in terms of, you know, what comes next, if this is completed now, what's the next step that you have in mind, in terms of either continuing this project or taking some other direction?

DR. ZHANG: Okay and so, first, for red snapper, I still want to work on that, and so, when I wrote the proposal, I did an accounting, but, because we haven't hired the post-doc, the salary

for the post-doc right now is saved, and, right now, I am just in negotiations, and we are trying to maintain this website for at least five years, or maybe ten years, and, in this time, we can continue to modify that.

I contacted LaTreese, who is doing the stock assessment right now, and she told me that one thing is the red snapper -- That they are considering from having it from two stocks into three stocks, and so it gives me a little bit of a headache, but I have to do a lot of modifications, but it's not as difficult as is thought, because we just need to modify the R and the interface a little bit, to make it updated, and so I will want to work on the red snapper part.

Then, today, we talked about many other species, like gag grouper, and so I think the ecosystem-based management is our ultimate goal, but it's too far away, and so we have to do it step-by-step. Right now, when people just sit here discussing, why not let me or other researchers -- We start with single-species management first, and then we can do a kind of like a pathway. If we start with a single species, then we just have some ecosystem-based indicator, and so that means, when we do the ecosystem -- We call the ecosystem-based model to run it and to make sure that, when you protect some species, it won't affect the others.

Then the next step is that we do a true multispecies stock assessment, but everything we can do together. Like, for example, the interface is developed, and the next step is just to change the core, and so we can make it into blocks and do it step-by-step.

CHAIRMAN NANCE: Jim.

DR. TOLAN: Thank you, Mr. Chairman, and thank you for the presentation. Having been one of the SSC members that was here when you initially laid this out for the proposal, way back when, I'm glad to see that you've really made progress on it, and you have a working tool now that can be released, and so congratulations to you, and I'm glad you brought up the point about having a three-stock model, because I was going to apologize to you, because I was one of the workgroup leaders that really pushed for that to be a three-stock model for Gulf red snapper, and so, having heard that it's not going to be that big of a change, and that difficult to change your model, I was really -- I was going to apologize to you, but I'm glad to see that you've made so much progress on it, and so thank you.

DR. ZHANG: It's fine, and I think our purpose is to make the

fisheries resource better and better, and so, if the stock assessment scientists make sure it's worth it to do the three-stock, I would like to collaborate with them to update it.

CHAIRMAN NANCE: I also remember your presentation, when you first proposed this, and you have come a -- I'm very impressed with the model, with the tool, that you have developed. It would be interesting to see how to use this in the future and to be able to -- Right now, I think you run different scenarios, to see the outcome and things like that, and how to integrate that into management. I'm going to put Shannon on the spot just for a second, but was -- Maybe I'm dreaming here, but was there intent by the Center to have an MSE person at one time, I think?

DR. CALAY: Yes, indeed, and that's a national initiative, and so each Science Center has an MSE point of contact, and ours is Cassidy Peterson, and I did pass on her name to Yuying.

CHAIRMAN NANCE: Thank you. Josh.

DR. KILBORN: Thank you very much, and thank you for the presentation. This is really an interesting tool. I'm curious how difficult it would be to actually kind of do this for another species, or several species. Thank you.

DR. ZHANG: The first is I can give you some idea, from the budget. In 2016, I wrote a $300,000 budget to MARFIN, and it got rejected, and, in 2017, NOAA very generously gave me $500,000, and so the difference is the extra $200,000 is for this framework of this user-friendly interface, but, since this has been developed, to move it to another species is not difficult at all, and so it's just a copy-and-paste, and then we need to work together to go through the management procedure to update the interface and the database.

The core side is written by R. As I said, some person can just stay in a room for like two weeks, or maybe like one month, and they can get it, and so it has a really big potential to promote the use for other species.

CHAIRMAN NANCE: I think the tool is the way it is because of your enthusiasm. I think you put a lot of effort into this.

DR. ZHANG: Yes, and it kind of blocked my other research.

CHAIRMAN NANCE: I think you've done excellent. Mike.

DR. ALLEN: Congratulations, Dr. Zhang, on this. This looks like

a fantastic tool, and I'm wondering your thoughts on -- I like that you did a professional and a standard version, and it made me think about the utility of this for teaching, for classes, and stock assessment classes, and I could see like competitions, where students would get in groups and work on different scenarios, using the model, and have you thought about using it in that way?

DR. ZHANG: Yes, and, actually, not only for class, because the citizen education, for like fishermen or other stakeholders, they can all play with this tool, because it's a simulation, and so even like what kind of extreme management you apply, it doesn't cause any harm to the real fishery, and so just feel free to play with that, and everybody register, and they have three scenarios they can share, and twenty they can save, and it's just a tool.

DR. ALLEN: That's fantastic.

CHAIRMAN NANCE: Any other questions?

DR. ZHANG: Again, I appreciate you guys being here and listening, and, if you have any chance to help us with this tool, please do it, and I will be very appreciative.

CHAIRMAN NANCE: Just one quick one, and when are you going to be in Galveston?

DR. ZHANG: Galveston is July 26.

CHAIRMAN NANCE: Okay. Thank you, and where at in Galveston?

DR. ZHANG: I think it's Texas A&M.

CHAIRMAN NANCE: Over on the campus, over in Pelican Island?

DR. ZHANG: I am not very good at --

CHAIRMAN NANCE: That's where I'm from, and so I will look to -- So July 26.

DR. ZHANG: Yes, and I can email you the detailed agenda.

CHAIRMAN NANCE: I will send you an email, so you know mine, and I will be happy to do that, but I will probably come over to that, since I live in Galveston.

DR. ZHANG: Great.

CHAIRMAN NANCE: Okay. Seeing no other comments or

recommendations, thank you very much for being here and being able to explain that.

DR. ZHANG: Thank you.

CHAIRMAN NANCE: As far as our agenda, we're a little bit ahead of time, which I think is kind of good, in some ways, and we may opt to close early today, instead of starting something and getting into a discussion and have to quit it, and so I'm going to offer public comment now. Anybody that would like to address the SSC publicly, we'll be happy to take those comments, and we'll do that now, and then we'll also have a period tomorrow, after our meeting tomorrow afternoon. First, we have Eric Schmidt, who is here, and we'll go ahead and take his comments. We appreciate you being here.

PUBLIC COMMENT

MR. ERIC SCHMIDT: Thank you. Be kind. Remember that I brought doughnuts this morning.

CHAIRMAN NANCE: They were delicious.

MR. SCHMIDT: Well, it is World Chocolate Day. I have two things that I want to address, the gag grouper and the red snapper. First of all, on the gag grouper, I listened to the comments from Mr. Blanchet, and he seems to think that maybe fishermen have a very short-term memory of how things were, and I don't mean anything personal, but it's, well, maybe we're catching more gags than we were last year, and, okay. Well, that's fine, but I go back thirty-nine years.

What I am seeing, in our fishery, is, after 2018, in the Fort Myers area, we had a catastrophic red tide. Outside of 1979, this was probably the worst event that I have ever witnessed. Out to forty miles, the water was blood red, and, I mean, everything was dead, and I have never seen dolphins and turtles and pelagic species, like tarpon and kingfish, that died in a red tide, and so Port Charlotte, which is by Ponte Gorda and Boca Grande Pass, that has been identified as a nursery for gag grouper.

I saw video after video after video, online, of the juvenile gags that were killed in the red tide, and so we had a very, very hard hit, and it was terrible. Now what we've seen here, four years later, when I'm charter fishing, is we have seen an absolute amazing recruitment, and we have a lot of year-one and year-two fish moving through the fishery, a lot. In certain times of the year, fifty or sixty throwback gag groupers.

Now, offshore, it's a little different story. We're seeing a lot of fish, and I'm hearing a lot of anecdotal information from fishermen, and from divers, and I'm still not seeing the large fish, the really large fish, the large males, in numbers that we used to see, and I will be the first to admit that.

However, what's going to happen here, as we move down the management process, and I know you're constrained by federal law to do something here, the law of unintended consequences is going to play into place. The commercial quota is going to be probably reduced to somewhere around 150,000 to 199,000 pounds. The quota, right now, is currently a million.

As of right now, we've already caught 50 percent of the quota, and so that fishery already will have been closed probably by April 1. June, the longline fleet gets pushed out to thirty-five fathoms. Now, once you get past thirty-five fathoms, that's where your larger fish live. You're going to have a discard mortality issue, and you're going to be throwing away all the large fish that you actually want to protect. I don't know any way around that, but that is going to be a problem.

The other issue is any new entrants into the commercial fishery are not going to have any access to IFQ shares. This year, there is no fish available on the market. I know people that just got into the business, and they cannot lease shares. People are holding onto their red grouper, and nothing. Nothing is available.

Three years ago, red grouper was fifteen-cents a pound, when I leased it. Last year, it was seventy-cents, and this year it's $3.50, and that's on a 15 percent change in allocation, if you took 15 percent from the commercial side and put it over on the recreational side.

Now you're talking about an 80 percent reduction, and so, even if it's available, it's going to be priced out of sight. Fishermen are not going to be able to afford to lease it, and so you're still going to have an issue with discards.

Now, to the red snappers, I participated in the SEDAR red snapper process, and I was on the phone call on Tuesday, and, to Jim Tolan, you brought up something, on one of the slides, about the number of recreational discards growing exponentially, and I can point to the fact that the recreational sector is growing exponentially. We have absolutely no idea what the universe of vessels are.

You can look at the number of vessels that are registered in the

State of Florida, but that doesn't necessarily mean that every single one of those vessels is a fishing boat. Just because you have a forty-two-foot Yellowfin, it doesn't necessarily mean that -- You can take it and go to the sandbar, and you don't have to go offshore and go red snapper fishing with it, but what I will advise the SSC, and I have made this perfectly clear in every portion of the SEDAR process, and I testified to this at the council process in Fort Myers last week, and the majority of the sampling that has been done for red snapper has been in the northern Gulf.

It's been from the Big Bend to Louisiana, and then occasionally in Texas. From Tampa southward, we have really been ignored, and there has been some sampling, but not in the same percentage-wise, and we have a fishery. We have a very good fishery, and everybody seems to think that, well, you know, when -- I've been told, over the years that, well, you know, when the red snapper come back. Well, obviously, you have not fished out of Fort Myers or Naples or the Dry Tortugas and gone out to 200 feet of water, because our fish are there. There's not a problem catching them.

Our fish are large, and they're much larger than anything that's being sampled in the northern Gulf, and there's a reason for that. We have to run a long ways, and we have to go fifty, sixty, seventy miles. If you get to Panama City, or Destin, you've got eighty feet of water at the sea buoy, and those fish get fished off real quick, because those boats are doing three trips a day, and so, yes, the average size of those fish are going to be skewed, but the average size of our fish are exceptionally larger.

On Tuesday, one of the last questions that I asked was how much sampling had been done for a particular part of the survey in the eastern Gulf, and the biologist told me none, and so we do participate. We have participated in the rebuilding process. We would just like to be included, so that our data is factored in, so that we can continue to participate in the fishery. Thank you.

CHAIRMAN NANCE: Thank you. I have, Eric, a question, and I'm concerned about gag discards, also. Do you have any recommendations of how to prevent that from occurring at that level?

DR. SCHMIDT: I have thought about this quite frequently, and I don't know how you get around it. I really don't know how you're going to do anything other than just kill gags, because, on our coast -- Now, in the northern Gulf, you can go target gags, and you don't have the red grouper fishery, but, from Tampa south, you catch them in the same area, and so I can't put a post-it note on my hook and say, you know, no gags, but, yes, it's a shame.

Now, if the season were open, they would be harvested anyway, but the whole purpose of taking this bite, and the reduction, is to make the stock healthy again, and this really is not going to -- In my opinion, it's not going to do what it's supposed to do.

CHAIRMAN NANCE: Any other questions for Eric? Tom, please.

DR. FRAZER: Eric, with regard to the sampling issue, you know, are we talking about the fishery-independent sampling, like the bottom longline survey, or are we talking about the MRIP sampling, or the state sampling? I'm not sure who you were talking to and where we're not getting any data.

MR. SCHMIDT: Well, what I was looking at is when -- It was a variety of sampling, and I would always ask the question of where -- How many samples were conducted here, and where was the primary thing, where was the primary sampling conducted, and, with everything, it was primarily done in the northern Gulf, whether it be the longline survey --

Now, there was MRIP recreational sampling that was done in the eastern Gulf, but, for factual fecundity estimates and samples and so forth, the majority of it was done -- Like age-at-length, and, when you're only going to an area, and the majority of those samples are coming from fish that get to see hooks three times a day, and the average size gets smaller and smaller and smaller, you know, that's going to skew the average size, and so that's why some people have said, well, there's fewer fish now, and the fish are getting smaller, and, well, that's because the season is getting longer.

Last year, it was sixty-three days. This year, it's seventy-nine, and so you run three trips a day, seventy-nine days, and most of those boats in the northern Gulf do that, and, yes, those fish are going to get smaller and smaller.

CHAIRMAN NANCE: Any other -- Thank you very much for being here. Do we have anybody else on the line? Okay. We will go ahead and adjourn for the day, and we'll be back here tomorrow at 9:00, and we'll start with the ABC Control Rule, and then we also have the wenchman data evaluation to consider. Thank you.

(Whereupon, the meeting recessed on July 7, 2022.)

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FRIDAY MORNING SESSION

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The Meeting of the Gulf of Mexico Fishery Management Council Standing and Special Reef Fish, Special Socioeconomic & Special Ecosystem Scientific and Statistical Committees reconvened on Friday morning, July 8, 2022, and was called to order by Chairman Jim Nance.

DISCUSSION: ACCEPTABLE BIOLOGICAL CATCH CONTROL RULE MODIFICATIONS

CHAIRMAN NANCE: Welcome, everyone, to our second day of the SSC meeting. We appreciate your attendance, both in-person here and on the webinar. From the SSC standpoint, we received, from the Center last night, or yesterday afternoon, we received the OFL and ABC yields for gag grouper, based on the models and so forth.

We had some questions on the projections that were used, and, in the greater amberjack, when we were looking at that and in the rebuilding plan, I think each of you can remember that the spawner-recruit curve was used to calculate recruitment for determining management benchmarks. However, the recent low rates were used in the projection period, and remember how it was real low for those last -- So that was assuming low recruitment will continue for the short-term, and so I think that may be one of the differences of why we're seeing not as big of a buffer in the gag as we did in the greater amberjack.

Dr. Siegfried is going to look into that, and then, when she's ready to kind of tell us what the projections were for that, then she'll let us know, and we'll go ahead and take care of that. Any questions from the SSC on that topic right now? We'll get into that when Katie presents that. Katie, I appreciate you being able to do that for us.

Today, we have, on the agenda -- Item Number IX is our first one, and we wanted to continue a little bit with our discussion about our ABC Control Rule modifications. Remember, last month, or the last meeting, we spent quite a while talking about that, and we made some motions.

I wanted to maybe start our discussion -- I prepared a little presentation, and my idea behind it was to kind of refresh our memories of what we discussed, where we're trying to go, the motions that we made, and so forth.

Also, last meeting, some of the SSC members that were here -- There's a lot of old-time SSC members on here, and some have even been on since this ABC rule was created, and even before that, and there are some newer members that may not have that same historical memory, or have that, and some come in with these ABC Control Rules and things are maybe a little bit foreign and those types of things, and so I wanted to kind of discuss, just in general -- Some of you are going to find this very elementary, and so just what we're trying to accomplish with this and maybe set the setting for maybe a little more discussion today. There may not be a lot to discuss, but, still, it opens up, and so, Bernie, could you bring up that presentation? Thank you.

First, we put this together, and then I just wanted to go through it, just to have a general discussion amongst ourselves about what we're trying to accomplish with this modification.

Last time, we had the honor to have Dr. Calay with us, and we have her here again, but it's always nice to be able to have her, and I think, if I'm not mistaken, you were on the SSC when the ABC Control Rule was put in place, and so it's nice to be able to have her with us and to be able to discuss with us.

Anyway, she came last time and reviewed alternative approaches to the council's current allowable biological catch control rule for determining the scientific uncertainty between our overfishing limit and the ABC, and so she gave that presentation. As each of us know, each regional management council must establish an ABC Control Rule, and it's based on scientific advice from the SSC.

The current ABC Control Rule has been in place since 2011, and the SSC can deviate from the ABC Control Rule, and we've done that in the past, on several occasions, but we must provide rationale, in order to do that. The ABC Control Rule is used by the SSC to provide catch advice, and that catch advice that we provide cannot be exceeded by the council when setting an ACL.

Since I've been on, and I think for a while now, SSC members have expressed a desire to revisit the control rule, due to its tendency for generating narrow buffers between OFL and ABC that is not, or may not, be representative of the scientific uncertainty within the stock assessment. Many councils, including the Gulf of Mexico, use a tiered approach for their ABC Control Rule.

For the Gulf Council, our Tier 1 is conditioned on a stock assessment being able to estimate a maximum sustainable yield, or its proxy, and being able to produce a probability density function

around the OFL, and so, when we look at those Tier 1 stocks, we have both of those conditions in place. We're able to estimate an MSY, or its proxy, and we have a probability density function, or PDF, around the OFL.

The OFL equals the yield at the maximum fishing mortality threshold, and that's MFMT, and the ABC equals the yield at P*, the percentile which represents the acceptable risk of overfishing, or risk tolerance, from the projected MFMT or F rebuild, in the case where stocks are subject to a rebuilding plan, and we're talking about that now with gag grouper, and so some of our stocks are not in rebuilding plans, and so we use just that risk tolerance approach, or we use F rebuild, if it's in a rebuilding plan.

Under the council's current ABC Control Rule, the choice of P* is informed by the performance of the stock assessment to encapsulate the true value of uncertainty in sustainable catch levels. A risk determination table is used to categorize criteria for selecting P* values, and we've all seen that table that was produced to be able to come up with our P* value, and that's what we're kind of using, which incorporates results from the stock assessment, uses the FMSY, or its proxy, the characterization of uncertainty, and the severity of retrospective patterns and the incorporation of environmental covariates, and so it has each of those components where we look at that table and say how certain we are, or uncertain we are, about those different things.

The Southeast Fisheries Science Center proposes the risk of overfishing, or P*, and scientific uncertainty, the width of the PDF, or sigma, be considered separately, and we've had those discussions with them. Currently, sigma calculations tend to underestimate the true scientific uncertainty, because, in our assessment models, some model variables are fixed without error, and the variance of some data inputs is predetermined, resulting in buffers between OFL and ABC that are narrower than the true uncertainty would otherwise suggest, and we've seen that in some of our last assessments.

To address this issue, a comparison analysis of multiple stock assessment results can be performed to quantify scientific uncertainty over time, and this method was proposed by Ralston in 2011. Results from the Ralston method indicate a minimum sigma of around 0.36 as appropriate for data-rich stocks, Tier 1 stocks, and allows for increased sigma to -- It allows for sigma to increase as data quantity, or quality, declines, resulting in larger buffers between OFL and ABC for lower tiers.

This is in stark contrast to some of the results from the Gulf Council's ABC Control Rule, which oftentimes uses a sigma value of 0.1 for some of our stocks. Dr. Calay noted that the ABC Control Rule could reduce fishing mortality below MFMT proportionally as stock size declines below BMSY.

Previously, the minimum stock size threshold, MSST, was based on natural mortality, or M. Rebuilding plans were required when the biomass of a stock was less than one minus M times BMSY. MSST is now set to be 50 percent of BMSY for many popular reef fish species. The stock may then be reduced to a point well below the level that produces MSY before any action is taken to reduce F.

An update of the Ralston 2011 approach has been published by Privitera-Johnson and Punt, which was 2020. This study suggests using probability-based harvest control rules to incorporate scientific uncertainty and risk tolerance when setting catch limits by scaling buffers between catch limits and scientific uncertainty. This revised approach in the paper was based on calculations of scientific uncertainty on projected spawning stock biomass and OFLs, accounting for uncertainty in recruitment and among-assessment variation.

OFL projections yielded a higher estimate of uncertainty, assuming a deterministic stock-recruitment relationship, and assuming a stochastic stock-recruitment relationship produced smaller estimates of uncertainty. Results from this updated method would result in a sigma min value of 0.5 for Tier 1 stocks. The Southeast Fisheries Science Center proposed using the Ralston method for calculating sigma min and assigned a default value of 0.4 for P* for Tier 1 Gulf stocks.

We had discussion last time, as you remember, and we came up with three different motions. The first motion is that the SSC recommends that the council request that the Southeast Fisheries Science Center develop sigma min using the Ralston approach method for Gulf of Mexico Tier 1 data-rich stocks, and that motion carried without opposition, with two absent, and so that was our first motion. What we would like the Center to be able to use -- Not just use the value from the Ralston approach, but actually to do the Ralston approach on Gulf stocks, so we could see what the sigma min value would be for our stocks.

We then, after discussion, we had a second motion by the SSC, and it says the SSC recommends that the council request that the Southeast Fisheries Science Center evaluate the potential for setting ABC at 75 percent of FMSY or its proxy, without exceeding OFL, as outlined in Appendix A of the Restrepo 1998 report for

Tier 1 stocks.

Remember the Restrepo had a similar ABC Control Rule type of thing that he proposed in 1998, and so we wanted to look and see what that would be able to do in our stocks, and that motion carried with one opposed and four absent.

The last motion that was made, and I think, really, this motion encapsulates all the other motions, but this was the third one, and the SSC recommends the Gulf Council to request a management strategy evaluation to better account for scientific uncertainty, including imprecision and bias issues in reducing ABC from OFL estimated or projected from data-rich Gulf stock assessments. Approaches to be considered should be those of Restrepo 1998, Ralston 2011, and Privitera-Johnson and Punt 2020, among others, and that motion carried with two abstentions and four absent.

That's kind of where we are now. Now, those -- As far as I know, Ryan, those letters from the council went to the Southeast Fisheries Science Center. Is that correct? Yes, and those papers were all on the last meeting's background material.

MR. RINDONE: They are also footnoted in the last summary that I sent to you guys.

CHAIRMAN NANCE: Yes, and so those are kind of -- That's kind of where we -- We have an ABC Control Rule that's in existence right now, and I think each of you had an opportunity to see that table. That was put into place in 2011, and what we're trying to do is move away from that, and sometimes we don't use that table, and we're just not comfortable with the P* that come from that, and so we kind of do come up with some other things to be able to have a buffer around the ABC value, but these other -- There is some great science, I think, in these papers, and we'll look at those, to be able to come up with some things, and so we don't have anything. I think, Ryan, is the Center -- At our September meeting, we'll look at this? Shannon, I'm going to ask you to --

MR. RINDONE: So our September meeting is already full.

CHAIRMAN NANCE: Okay.

MR. RINDONE: Let me bring it up real quick. There are several things that are on there.

CHAIRMAN NANCE: Let me ask Shannon, and you did get -- I think the Center did receive letters from the council?

DR. CALAY: Yes, and we recently did receive the letters, and we certainly were aware of our commitment, and now it's just a matter of -- We could be ready as early as September with the first motion. The MSE will take more time, although it's possible that we can work with Yuying to utilize her platform, and so, anyway, Ryan, it's up to you to tell us when there's time on the agenda.

MR. RINDONE: Not September. In September, we currently have several things on the list. We have the empirical dynamic models for shrimp, and we have the socioeconomic stock assessment workshop, alternative approaches for sector allocation determinations, the essential fish habitat dashboard review, the review of the scamp operational assessment, and we have a sliver of time carved out for any gag things that might pop up, because, you know, there could be some.

Statements of work for lane snapper, gag grouper, and the kingfish assessments that will all start in a couple of years, and a discussion about allocation for kingfish for CMP Amendment 33, and that will be pretty much a full three days. I do not think that September is the time to really set aside, you know, at least a few solid hours to let you guys bang this around a little bit.

CHAIRMAN NANCE: I think, last time, we had, I think, around six hours.

MR. RINDONE: Yes, and I gave you a whole day the last time.

CHAIRMAN NANCE: I think we were very productive with our discussions, and I think -- I'm very happy with what we have proposed to look at and move forward on the ABC Control Rule, and I think we're well suited to be able to move forward with those presentations and then our discussions, and so probably not September, but, after that, we would be able to have those and be able to have that discussion, and I think we'll need to block some time out for, obviously, the presentations and then discussions around those, so that we come up with a good agreement on how we want to proceed with the ABC Control Rule.

I think, of all the things we do, I think setting these OFLs and ABCs are very important. I mean, they do impact the fisheries, and so I think we need to be, as a body, comfortable with what we're proposing and using, so that we can be able to move forward with that. Any discussion from the SSC? Jim, please.

DR. TOLAN: Thank you, Mr. Chairman. In terms of the September meeting, and scamp is going to be coming up, and we'll review that, and it seems like scamp has gone on forever now, because I've been

part of that one for almost three years.

If we're not going to have a new set of ABC Control Rules, if we're going to set catch advice, are we going to sort of default back to the table that we have now for setting that catch advice, come September? I was just curious about that. Thank you.

CHAIRMAN NANCE: We would have that option, to use those tables, or, if we -- As we've done in the past, on several occasions, we could use other methods to calculate an ABC that would be different from what we're getting out of the P* value from what we're getting out of the table.

DR. TOLAN: Jokingly, I was going to set an over-under on what the table would come out with, because I can probably tell right now what it's going to be.

CHAIRMAN NANCE: Jim, you probably -- You've been on that's been on this for a while, and I always appreciate it. You know, it's nice to come to a meeting and there's a lot of historical knowledge about -- I ask Luiz on several occasions, because sometimes I'm unsure why things are happening one way, and he reminds me of ones in rebuilding and those types of things, and so that historical knowledge is a great help, and I think many of you on the SSC have been in that historical vein, and so it's nice to be able to do that. Any other comments or questions or discussion? Roy.

DR. CRABTREE: I wasn't here at the last meeting, but I have looked through the minutes and all, and is there anywhere in any of this that we talked about or factored in somehow the age of the stock assessment? For example, you look at the uncertainty, and, if the terminal year is two years in the past, that's one set of uncertainty, but, if the terminal year is four to five years in the past, it seems to me the uncertainty is much greater, and it comes to my mind because of the gag assessment, and we were looking at something where I think the terminal year is four years ago, but that doesn't really seem to be factored in anywhere, and it's that the uncertainty is this, regardless of how -- You know, if you have a species that's relatively short-lived, it can be a big deal, and I just wonder if that's come up or if anybody else's control rules look at that kind of thing.

CHAIRMAN NANCE: Shannon. You might as well stay there.

DR. CALAY: I would have to get my computer so that I can read my chat.

CHAIRMAN NANCE: Okay. When you get done, why don't you bring it

up, and we would love to have you sit at the table. Your input is invaluable.

DR. CALAY: All right. I can grab my stuff. When I have access to my chats, I sound much smarter. Okay, and so we did also work with Kristen Privitera-Johnson, who has a methodology to look at the effect of the projections, also, the uncertainty in our projections, from one assessment to the next, as part of the sigma min calculation, and so that's a partial way of getting at at least the performance of projections from one stock assessment to the next, but, you know, Roy is also correct that, as we project more and more years, and we're farther away from the terminal year of the assessment, our uncertainty does grow substantially, and it is not entirely clear that we are capturing that in the control rule, and so I think that we can bring part of that information to the next discussion of the ABC Control Rule from the Privitera-Johnson formulation of the sigma min calculation.

CHAIRMAN NANCE: Right, and I think, Roy, also, on that, while we may be able to create sigma values and those types of things, and look at them, we also have the ability, through discussion, to make those larger, if we feel like the stock assessment is nine years old, and are we satisfied with what we're seeing and those types of things, and so I think we have those options to be able to change that.

DR. CRABTREE: Yes, and I just don't recall us doing that in the past, and it's the same thing with, you know, projections. We'll give the council three or four years' worth of ABCs, but certainly the uncertainty surrounding them goes up, I think, quite a bit as you move out.

CHAIRMAN NANCE: Luiz, please.

DR. BARBIERI: Well, I sent you and Ryan -- Along those same lines, Roy, and I didn't think about that, but that's a very good point, but a quick outline, and I don't know if we can put it up on the board. I did not send it to -- I'm sorry. I didn't send it to Bernie.

CHAIRMAN NANCE: He can send it to Bernie.

DR. BARBIERI: The idea there is basically for us -- This is just some points for discussion, that, before we get the analytical products, right, that we have requested, and we start discussing more of like the mechanistic part of how that's going to come out, one thing that I thought would be good for us to discuss is how we want to apportion, right, some of this uncertainty assessment in

the control rule and what kind of criteria we would be using, and I think Roy brought up one point, which is the age of the assessment or how far back is the terminal year of data in the assessment, right, and so I'm thinking, here, about other things, and this is just to stimulate discussion and get us started on looking at this and seeing criteria that we can use.

If we're going to use, for our Tier 1 stocks, and those are the stocks that have a quantitative model-based assessment, and so our Tier 2 and 3 and -- I mean, that's really non-model-based, and so that follows a completely different criteria, and so application of the P* approach, and the Restrepo et al. sigma min values, would be applicable only to our current Tier 1 that's in our ABC Control Rule, and so we could sort out our stocks and look at the stock assessments for different stocks or different species based on different criteria.

That criteria would, you know, develop qualitative points that would put them into those different values of sigma min, so we would have one standard deviation, or two, or whatever criteria we come up with, in terms of the number of standard deviations.

CHAIRMAN NANCE: Right now, does that table -- Is it used for Tier 1 and others?

DR. BARBIERI: Right now, our ABC Control Rule -- That table, our risk determination table, that comes up with the P* is only used for --

CHAIRMAN NANCE: For Tier 1.

DR. BARBIERI: It's only used for quantitative assessments that have model-based assessments, and, so, anyway, here, I'm thinking -- I think Will had proposed, or at least discussed, and I'm not going to say proposed, because I don't want to put words in his mouth, but, you know, we had discussed this issue of using the Restrepo et al. approach and setting ABC equal to a fraction, in this case 0.75, of OFL, and that was a proposal that was on the table.

The other proposal was to use the Ralston approach, right, that we know it's imperfect in nature, but it would move us forward, in terms of trying to adopt a P* approach, and so, in this case, we would just work on the sigma, on the uncertainty component, and the council would set the P*, whatever P* it decides to have, in terms of risk of overfishing, and then that buffer between OFL and ABC would be based on the actual assessment uncertainty, and that assessment uncertainty is going to be somewhat quantified by the

value of that sigma min that's going to be applied, right, and so, in this case, whether we use one sigma min, or two or three, we need to kind of discuss whether we want to sort out that a stock assessment for red snapper has one level of uncertainty that is very different than an assessment for scamp or an assessment for greater amberjack.

When we go to through the assessment process, we know that several stocks have either data limitations, or parameter limitations, and sometimes we can use the actual uncertainty, the CVs, right, that we have a metric for that, and sometimes those values are imputed into the model, and they are fixed, and we discussed that yesterday, for natural mortality and steepness for gag, and we can see how influential that is, in terms of the outcome of that assessment and our ability to characterize uncertainty.

Here, some criteria for discussion could be the data availability and quality and what kinds of data we have, right, in terms of landings and discards, whether we have indices in the assessment, if we have a fisheries-independent index or not, or if we just have scientific fisheries-dependent indices, the availability and quality of the composition, data age and length composition, and then several issues associated with life history, whether we know or not, in terms of all the reproductive parameters and discard mortality, et cetera.

One that I think would be worth discussion would be stock productivity, right, and so whether we fix the parameters of the stock-recruitment relationship, steepness, or not, or if we can actually estimate MSY directly, and that's a big deal, in terms of us saying we have an idea of what the recruitment dynamics actually is, and we have an estimate for that, versus we don't, and we have to either fix that parameter or use an SPR proxy, and so, to me, this is something that's very influential and that our current ABC Control Rule hasn't really been able to appropriately handle.

The difference there, the little discount that we give a P* now, in my view is too small between you being able to estimated steepness versus not, and then the uncertainty characterization -- - We know this, because, every time we are looking at some of these assessments, how many assessments we can actually use the actual CVs, the uncertainty associated with different data series, versus we don't have them, and we have to impute something different, right, a fixed parameter.

The number of imputed CVs, and the number of fixed parameters, in the model I think would make a difference, in terms of our ability to -- So this is just like -- I was just trying to think of

criteria, and I think the age of the assessment --

CHAIRMAN NANCE: Yes, I think the age of an assessment would be like kind of an uncertainty characterization. I mean, the older that assessment is, the more uncertain we are with the parameters that are being produced, and I think that number of fixed parameters -- You know, the Center always provides what are the fixed values and what are open to estimation and those types of things, and so any discussion on these, on Luiz's --

DR. BARBIERI: I think one point of decision, a decision point, here for us is whether we want to have, you know, one value of sigma min that we can apply, right, for all quantitatively-assessed model-based stock assessments or if we're going to subdivide them, but, looking at these assessments, different types of assessments, we can see already there is a wide range in data availability and our ability to estimate parameters, and so I don't think we want to treat all of them the same, right, and that we want to kind of sort of them out and either we use one sigma or two sigma or whatever value -- However many values of sigma we want to use for the next higher level.

CHAIRMAN NANCE: Like, for example, the Restrepo approach.

DR. BARBIERI: Right.

CHAIRMAN NANCE: It has that value, 0.75, and ABC is equal to 0.75 of OFL, which is a standard mechanism to be able to do that, and sometimes we're comfortable with that, and other times we're not, and I think that's why that -- In 2011, the other approach, the other table, was created.

I think there are four different groupings of discussion, I guess, and so the uncertainty around each of those, so that you can take a look at what the assessment is, what the catch is, whether we have fishery-dependent and independent surveys, those types of things. Josh, please.

DR. KILBORN: Thank you. I'm curious, and what is the age distribution of our assessments, and how old is the oldest current assessment?

CHAIRMAN NANCE: It must be big, because Ryan is laughing. Anyway, go ahead, Ryan.

MR. RINDONE: The Spanish assessment is so old that all those Spanish are dead. We did the Spanish mackerel assessment -- Actually, I think even older than that would be yellowedge grouper.

Some of those are still alive. Not many, but some of those are still alive.

The yellowedge grouper assessment was done in 2011, with data through 2009, and management was taken on the results of that assessment I think towards the end of 2012, and so, at the same time, tilefish, the tilefish complex, was also assessed, using golden tilefish as the indicator for that three-species complex, since it's the one that is landed the most frequently in the Gulf. That assessment was -- It helped inform management, but the assessment itself had a lot of data limitations, and so with data through 2009 being the oldest at present.

CHAIRMAN NANCE: Does that answer your question, Josh?

DR. KILBORN: Yes, more or less. I mean, it tells me the oldest ones, but how about everything else? What's the distribution of the rest of the assessments look like? Are they fairly regularly updated, every three to five years, or do we have long stretches in between?

CHAIRMAN NANCE: Well, sometimes -- You know, it depends on the species, and, as you see that SEDAR table, sometimes things are -- - Some species are more rapidly evaluated than others, and being red helps, I think, in that evaluation on the table, but it's one of those things where we're planning out -- As the SSC looks at that table, you know, we're planning out five years and seeing what we want to input into that SEDAR stream to be able to get those assessments run.

Sometimes we see another species that becomes volatile, and that gets put into the SEDAR table, and something else gets kicked out, and so it's just a matter of managing each of those species, the assessment for those, to be able to come up with OFL and ABC recommendations for the council.

MR. RINDONE: Bernie, I sent you the SEDAR schedule, if you could toss that up there.

CHAIRMAN NANCE: Shannon and then Roy.

DR. KILBORN: Before that, I just want to --

CHAIRMAN NANCE: Go ahead.

DR. KILBORN: The point of my question was really to kind of determine if we need to spend a lot of effort on the age of the assessment issue, and if it sounds like, in general, we're in a

much better position with the age of our assessments, then we don't need to come up with a full slate of, you know, fine-scale, or finely-detailed options, for the age of assessments, if we really only have a few that are old, and most of them are, you know, about three years or so. That's all. Thank you.

CHAIRMAN NANCE: Thank you, Josh, and I think that's a good point. I think what Roy's point is is more of, when we're looking at gag or something like that, which is one that is assessed more often, when we get to a point where it's three years old, we're kind of comfortable. When it's five years old, we're less comfortable, and those types of things, and so I think it's just a matter of knowing what the age is, and then we can make some determinations on that. Shannon, please.

DR. CALAY: The Science Center is certainly aware that the assessment frequency is lower than desirable, and we are working on methodologies, including the interim assessment approach, to increase the assessment throughput and make them more -- Well, make them more current, right, make the terminal year more recent, and so the ABC Control Rule ought to think about -- Right now, our intention is to provide interim assessment advice more frequently, and we have a mechanism to estimate OFL and ABC using that interim assessment mechanism.

We are working on other empirical approaches, and we're doing a test with shrimp, as we speak, to see if an empirical dynamic model can help us with OFL and ABC for shrimp, and so it may be necessary to consider whether we have a tier to accommodate those interim assessment and empirical approaches.

CHAIRMAN NANCE: Ryan, to that point?

MR. RINDONE: I was going to mention the interim analyses also, and, for some of these species, we get them annually, like for red grouper, and it would stand to reason that gag would likely be added to that list.

Some species, it's just not feasible, at this time, to be able to do that, and the data are just not great. Like greater amberjack is an example, and it isn't necessarily that it couldn't be forced through it, but we probably would be that satisfied with how it goes, compared to what we're currently able to do for things like gag and red snapper. Well, not gag, but red grouper, red snapper, et cetera.

The other thing to remember is that there is a number of reasons why the stock assessment schedule could change, and so it could be

that key data are in need of being revised, and we need to push something back to make time for something, or for -- Like, for the research track for greater amberjack, we know that there is the great greater amberjack count, or whatever specifically that project is being called, and we didn't want to start that effort before that large research project was able to be completed and those data able to be considered for that process..

That would have been ill-timed, and so things will get moved around based on what we know of what's coming up, and sometimes Tom just doesn't like the schedule and moves things around, and so the council can weigh-in and say that they want to see something moved up ahead of something else, if there's something that's on the horizon from a management perspective.

We recently had an agreement with the Florida Fish and Wildlife Conservation Commission to do an interim-style update for yellowtail snapper, which had some costs, in terms of analyst time, for doing some of the other FWC-run assessments, and so this is a very dynamic, ever-changing thing, this file that you see in front of you right now, and, as often as you guys feel inclined to weigh-in on it, you're certainly welcome to.

The council welcomes your input, but what we don't have in here are the interim analyses, and, considering that we get, what, Shannon, probably at least a couple a year at this point -- I mean, what you see on here, you can add another two assessments to that, just based on what we normally get now, or for the interim analyses that we receive, and likely one more, if you add gag to that, and so we actually get a fair amount of analytical products that are strictly assessment-related from the Center and from FWC.

CHAIRMAN NANCE: I think that's good, and I appreciate that, because those interim analyses allow us to see where we're at, and we have given some advice on OFL and ABC, and we're seeing if we're staying on track with those analyses. Roy, please.

DR. CRABTREE: Yes, and I think the interim analyses are really important, but, you know, if you have an assessment, and then you do interim analyses for the next five years, you're updating one or two aspects, but a lot of things aren't being updated, and so you're still progressively seeing the uncertainty go up quite a bit.

CHAIRMAN NANCE: Any other comments? Harry, please.

MR. BLANCHET: This is not to that, but this is to Luiz's outline, and so I will defer until --

CHAIRMAN NANCE: Go right ahead. I think we're back on that, Harry, and so please.

MR. BLANCHET: Option 1, and get this might just be shorthand, but the Restrepo et al. approach is actually based on F and not on ABC, and so the F at ABC would be 75 percent of the F at OFL and not the harvest being 75 percent of the OFL harvest. Now, that's maybe being persnickety, and, if you go back to the Restrepo, you see the original, but I just didn't want that point to be lost in the discussion.

CHAIRMAN NANCE: Harry, thank you so much. Luiz.

DR. BARBIERI: Absolutely, Harry, and I was just kind of -- This is actually -- I have like a yellow sticky note on my desktop, and I was kind of jotting things down, and I wasn't thinking about the formalities of -- But you're absolutely right. I mean, since this is on the board, we want to make sure that the notation is correct, and so I appreciate that.

CHAIRMAN NANCE: Thank you for that. If there is -- Tom.

DR. FRAZER: I just have some general questions, and maybe they're for Shannon, but I'm just trying to understand how much time is involved in working through these various approaches, other than the Restrepo approach. I always look at it from a workload perspective, right, and, as you pointed out, we're trying to get more throughput with regard to assessments and things like that, and, whenever we make things more complicated, we add time, and we kind of limit our ability to process some things that might be more helpful, and so if you defaulted, for example, to an Option 1, but you knew that you were going to have a couple of stocks that you dealt with a more detailed approach, like red snapper, red grouper, and gag, that might be a better approach, but I'm just curious about the workload.

DR. CALAY: Well, our workload is enormous, at the moment, and a lot of that workload is not planned, or plannable, which makes life very difficult, because so much of our workload right now is driven by council requests, by SSC requests, which we haven't built-in that flexibility to our calendars.

Our calendars are pretty much flat out just trying to meet the stock assessment schedule, and so we are always interested in finding parsimonious ways to conduct business, right, and that's one reason why the Center wanted to separate P* from sigma min, because P* is actually relatively irrelevant, as long as it's not

set at 0.5, right? As long as it's set at something rational, it doesn't have a big influence on the buffer. The sigma min does, and so it's something we were willing to try to better estimate with our actual Gulf stock assessments.

You know, that said, there are even simpler approaches that are used, that have been recommended or are used, in other regions, and, you know, we can -- I think we've summarized some of those in previous discussions of the ABC Control Rule, and certainly those could be discussed anew.

The Option 1 here that you see -- It may be that we actually did intend -- It's not from the Restrepo guidance to use 75 percent of OFL, and it as Harry said, and it's 75 percent of the FMSY. However, we have found that, when we use proxies, there are times when that 75 percent of has not performed -- It actually exceeds, in some cases, because -- It exceeds FMSY, because the shape of the yield per recruit curve is unusual, and let's put it that way, and so we've had a few unusual circumstances arise, and so that attempt -- Option 1 is to avoid that rare event, where the behavior of those projections are not what we expect.

I would say that we are very -- The workload is high, and we have to prioritize requests that come to us. In many cases, we have had to simplify requests that come to us, and, therefore, the response has not been as useful as it could have been, and so we do need to really work to do the highest-priority work that can be the most useful to the council and the SSC. I think that's enough said.

DR. FRAZER: Well, that's what I would like you to do as well, right, and, again, I just -- I mean, there is -- There are only a few stocks that we have enough information, really, to kind of work through a more complex process, and it would be -- It seems to me that we would kind of set a default at whatever the SSC chooses to do, but then identify those stocks that you want to get a little more depth, and that might help to, just right upfront, alleviate some of the workload issues and help streamline -- Put the appropriate folks on more assessments or something.

CHAIRMAN NANCE: So there may be a standard type approach to many of the stocks, but then some of the stocks, where we have additional information, or issues that we are worrying about, that we would take a different approach on those, to be able to -- But that's not all of them. I think that, you know -- I think that's, from a workload standpoint, very acceptable, to be able to do that, and all these stocks are important. There's not any of them that aren't, but some we have information and we're able to do a better

evaluation, and others we're not. Jim, please.

DR. TOLAN: Thank you, Mr. Chairman. As I look at the table, or not the table, but the information that Luiz has laid out, it almost looks like the backbone for the ABC Control Rule 2.0, but you touched on a very, very important point when you brought up stock productivity, and it's that steepness value, and I'm sitting here wracking my brain, and, of all the assessments that I've been a part of, I can't think of one, especially for the reef fish, that H has been well behaved, and I'm just curious. Can anybody think of one where we have a good handle on steepness?

That's the hard part, because it's such an important parameter, and it's really a question for Shannon, but, if it's such an important parameter, and we think we know there's a stock-recruitment relationship, but really there isn't -- Does everything just sort of blow up after that, and we have to go with either Option 1 or Option 2, and we can't really pin down that buffer? Thank you.

CHAIRMAN NANCE: Shannon, to that point, please?

DR. CALAY: This has been an ongoing debate and discussion, of course, because, in most cases, if you actually look at the stock assessment spawner-recruit relationship estimates, there is very little evidence of a relationship between spawning stock and recruitment, and a lot of this is because, you know, we are -- Our data comes from a period where fishing is already very high, right, and we don't have any contrast in our data that shows a time where fishing was near zero, and we don't have length composition data and age composition data from low fishing conditions.

What we've attempted to do, in some cases, is set steepness near one and then make strong assumptions about what the recruitment will be in the projections, or we have used meta-analyses to attempt to inform steepness with a prior, or, in some cases, we have attempted to estimate steepness, look at the likelihood profile, and then fixed it at a value close to the maximum likelihood estimate, and there have been other approaches as well, but what I'm really getting at is there is very little data to inform the shape of the spawner-recruit function in the Gulf, as well as the parameters that we need, but the National Standard 1 guidance is actually moving away from spawner-recruit configurations that rely on steepness.

We should see new guidance in the future that may help us, and it may not help us, and we don't know yet, but, yes, there is a debate, and it's handled differently in the South Atlantic versus

the Gulf, and there has been attempt, on the Science Center's behalf, to try to standardize that disparity so that we're not -- You know, we don't have a place where we are willing to make assumptions about the spawner-recruit relationship and steepness and places where we're not.

You're seeing some transitions, which in some ways is awkward, because maybe a previous stock assessment used a different approach, and so it's an open area of debate, and I think what would be very helpful is to come up with some guidance for what to do for the Gulf that is based on, you know, recent science recommendations, for example, because we are, right now -- I mean, Katie would maybe be a little better at saying this, but I think what we've tried to do, in recent assessments, is estimate the steepness.

If it is estimable, we would use that estimate and just assume the shape of the spawner-recruit relationship, for example, is Beverton and Holt. If there is any ability for us to determine a rational steepness value from the likelihood profile, but it can't be estimated without, for example, instability in the jitter performance, we would fix it at the maximum likelihood estimate from our attempt to estimate steepness.

That's been our standard procedure recently, and it's consistent, to some extent, or more consistent, at least, with what they're doing in the South Atlantic, but there is still debate about whether that is the most appropriate approach.

CHAIRMAN NANCE: Thank you. Harry.

MR. BLANCHET: I was intrigued by Shannon's comment about stocks that behave oddly when you're applying that 75 percent of F of F at OFL, and I recall at least one discussion about that in a stock assessment, some time ago, and it's -- Just like we currently have -- You know, we use the current table, except where there are exceptions, and I would think that we could still use some of that Restrepo approach with a boundary on it, such that, if your yield at 75 percent of the F at F at OFL is more than, I don't know, 87.5 percent of the yield at OFL, then discount that approach and take a different approach, based upon whatever data you have available, to come up with a separate estimate, but maybe using a more generic yield function, rather than what is estimated by the stock assessment, something like that.

As an approach, I don't want to just leave it off the table, because there are some known issues with it, and I think we can address some of those issues and it's still a reasonable approach

to leave as part of our levels of consideration. Thank you.

CHAIRMAN NANCE: You're absolutely right, Harry, and I think those are rarer events, for sure, but certainly the Restrepo approach is well founded in science, and it's an approach that certainly will be left on the table as we have discussions. What we wanted to do today is just have a general discussion with the SSC, and I want each of you to -- Remember the meeting summaries, I think, are -- I mean, I applaud the council staff, when they put those together. I mean, they're well done, and they're useful.

I go back, and I'm able to revisit and relive those meetings, because of those, and so take a look at that, at the meeting we had last time, and I think it does a very good job of summarizing our discussions. If you're really a glutton for punishment, you can listen to the exact tape and those types of things, to really relive it, but the meeting summaries do a great job of that, and just kind of wrap your head around what we're trying to do here as we move forward with the modification of the ABC Control Rule.

As we see what the Science Center develops in the next few months, we'll be able to look at those and have a general discussion and be able to move forward. Any other closing remarks from any SSC members?

DR. KILBORN: Can I ask a quick question?

CHAIRMAN NANCE: Josh, absolutely.

DR. KILBORN: I'm just curious, and what is our kind of proposed timeline for working through this issue? I know we're looking at past the September meeting, and I'm just trying to figure out how long I have to do the homework.

CHAIRMAN NANCE: Probably at the SSC meeting in January, and so you can not do anything with it and then start looking at it in October, if you want to do that.

DR. KILBORN: No worries. Thank you.

CHAIRMAN NANCE: You're very welcome.

MR. RINDONE: Mr. Chair, I've gone ahead and put six hours down in January, and so basically a whole day, for you guys to chew on the products the Science Center is able to produce by that time.

CHAIRMAN NANCE: Okay. That's perfect.

MR. RINDONE: If anybody on the SSC has any trouble finding any of these papers, please let us know, and we have a fully paid-up membership on just about everything, and we can pull any of these papers for you.

CHAIRMAN NANCE: Okay. That's I think a good discussion this morning, and I really -- Last time, I thought we had a great discussion, and I appreciate all your input and your thoughts, because it's going to be a joint effort here to be able to come up with how to do this. Let's go ahead and take a break, and we'll come back at twenty -- I guess twenty after ten, Eastern Daylight Time.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: Okay. We will go ahead and get restarted here. I appreciate your patience, and we're going to have -- We will do gag grouper first, and so Katie is sending a couple of slides to the meetings, and, once we have those, then we'll be able to put Katie on. Following our discussion on gag grouper, then we then go into our last item of the day, which is a presentation and discussion on wenchman. Dr. Siegfried, we'll go ahead and turn the time over to you.

REVIEW: ALTERNATIVE MODEL RUN FOR SEDAR 72 BASE MODEL AND USING FLORIDA'S STATE REEF FISH SURVEY (CONT.)

DR. SIEGFRIED: Thank you, Mr. Chair. It's funny, because I would love to just talk about this stuff, but I thought it was really important to show you the tables and figures, which takes way longer than just talking, and so hopefully I've included everything you need.

What I understood to be the question is we don't see a big buffer, or difference, between the OFL scenarios and the rebuild scenarios that Lisa sent on yesterday, and so what I've shown here are all of those scenarios that she sent yesterday in the bottom-left table, and then the table that she presented during her PowerPoint presentation on the right, and so that's SRFS Run FSPR 40.

Now, the stock-recruit curve was used for both the benchmarks and the recruits that are assumed. If you look at the table on the right, the second column says "R", and that's the recruits, and you will see that changes based on the stock level. Those are pulled from the stock-recruit curve directly, and it's not any assumption about high or low recruitment, and so I wanted you to see that in the table there.

Then, in the bottom-left-hand, the other point that I wanted to make is that the time to rebuild is longer in these scenarios than it is for amberjack, which was the thing that you all were comparing it to, and so the top-left is the OFL scenario, and that F, that fishing mortality, is 0.098, and we have 0.42-ish million pounds gutted weight in 2023.

The bottom-left is the -- I think it's the preferred scenario, and it's not technical language, but it's just what was requested previously, and the time to rebuild is 2047. Now, for gag, it's 2027, and so it's quite a bit shorter time to rebuild, and so that's going to have an influence, and so the difference from OFL for that rebuild scenario is 6 to 7 percent, depending on the year.

The upper-right-hand corner is -- The time to rebuild is 2043, and that's the Tmin times one generation time, or plus one generation time, and the F rebuild there is 0.08, and so that's very similar to the F rebuild in the bottom-left, which is 0.09, and then you'll see that difference from OFL is only 14 to 17 percent, depending on the year, and the bottom-right is the 75 percent of SPR 40. That time to rebuild is 2042, with an F rebuild of 0.07 and a 21 to 25 percent difference from OFL.

Now, for greater amberjack, this is a slide you all have seen, or a picture you all have seen, many times. The recent average recruits were used for the projection that was decided for catch advice, and the figure on the top-left is showing you how much lower than that is than if we pulled an average of the estimated or the assumed, and even different from that is what it would be if we pulled it from the stock-recruit curve, and so that recent average was used. In the bottom-right table, you will see that R doesn't change, like it does for the gag projections, and that's just stuck at 1650, and that was the recent average from 2009 to 2018.

That low recent average was assumed, and that's different from gag, and then there's also a much shorter time to rebuild, and that causes the rebuild yields to be lower than fishing a F OFL. If we have to recover in -- I mean, in this instance, it's 2022 to 2027, and it's very short, as opposed to what we're putting forward for the rebuilding plan for gag, and so I think those are the main reasons that there is a much smaller buffer for gag between the OFL projected yields and the rebuild scenarios than there were in greater amberjack. Are there any questions? That's the last slide.

CHAIRMAN NANCE: That's an excellent presentation, and so I know exactly what's happening. Any discussion from the SSC on what

Katie just presented? Bernie, why don't you keep the second slide up, because I think that's the one -- There you go. Perfect. Doug, please.

MR. GREGORY: Thank you. Good morning. Good morning, Katie, and thank you for this. I've got a question. Let's say we have an ABC that's 10 percent lower than the OFL, and that's caused some concern, because 10 percent doesn't seem like much, but could we look at this in a different way, like interest rate or money in the bank? In the near future, we'll have 10 percent interest rates, maybe, but the spawning stock biomass is our bank.

If we meet that 10 percent goal, over a number of years, even though it's still 10 percent less than OFL, and only 10 percent, it's cumulatively adding to the spawning stock biomass, and, to me, that seems to be a more -- Maybe a more appropriate concern, or not concern, but thing to look at, to determine how effective our ABCs are, and does that make sense to you, or is there a way to do that? Thank you.

DR. SIEGFRIED: Good morning, Doug. I think a couple of things to add to that analogy is the interest rate is guaranteed, the amount in the bank, as long as it's not a money market or what has happened to my retirement lately, but that money is still going to stay in there, and you are guaranteed to get that interest each year, and I think part of what this buffer represents, for us, is some precaution, as well as a potential for rebuilding that stock.

If everything happened -- If we actually only fished exactly 0.42 million pounds gutted weight, and 0.62 million pounds gutted weight, then there wouldn't be any problem with fishing at OFL, and, if the stock did exactly what we thought it would do, there wouldn't be any problem, and so some of that buffer has to be for the uncertainty in the system and the prosecution of the fishery, but I think that, yes, it's a positive way to look at it, if those things are done perfectly and we don't have another red tide or some other episodic mortality, and then you are banking some of that SSB. Does that answer your question?

MR. GREGORY: Yes. Thank you. One related question is, what we have here for ABC, is that F rebuild, or is OFL F rebuild?

DR. SIEGFRIED: The F rebuild are the three other scenarios, where I have the values for F rebuild on the bottom-left table, the bottom-left scenario, and the right two scenarios. The OFL is showing what would happen if we just fished at FSPR 40 percent.

MR. RINDONE: So, Doug, F rebuild is ABC, or what ABC would be

depending on the rebuilding timeline that's ultimately selected by the council.

MR. GREGORY: Okay, because I can't see the numbers on my screen. They're too small. I can't read them. Thank you.

CHAIRMAN NANCE: Doug, they would be the same numbers as the information that was sent last night.

MR. GREGORY: Well, I realize that, but I'm just harking back to some discussions we've had about F rebuild, ABC, and OFL and the relationships among the three. Thank you.

CHAIRMAN NANCE: Sure. Thank you, Doug. Shannon, please.

DR. CALAY: We have had a pretty storied discussion, over the years, about this, but it's interesting that OFL, from the agency's perspective, is always the overfishing limit, right, and so it's always determined by the yield when projecting at FMSY or its proxy, but the -- You know, if you are exceeding the F rebuild, you will delay the rebuilding of the stock, but it may not technically be overfishing, and so, at times, we have interpreted OFL to be F rebuild, but the agency interprets it otherwise, right, and the agency says that can be ABC, but OFL is in fact the yield stream from the projected FMSY or its proxy.

MR. GREGORY: Thank you. That's all I have. I appreciate it.

CHAIRMAN NANCE: Thank you, Doug.

DR. SIEGFRIED: Mr. Chair, just one comment?

CHAIRMAN NANCE: Yes.

DR. SIEGFRIED: It may be a little confusing to present it this way, because we don't normally show three options for ABC, and, also, creating a rebuilding plan is rare, and so I acknowledge that that might be a little confusing.

CHAIRMAN NANCE: I think what was confusing us this morning was just the buffers, and now you've given us a good explanation, and so, I mean, I'm very comfortable with what we're doing. John Froeschke, please.

DR. JOHN FROESCHKE: I guess I'm just trying to understand, a little more generally, and is it fair to say, based on the explanation, that, stocks with long rebuilding plans, you would expect the OFL to be much closer to ABC, in contrast to the shorter

stock rebuilding plans, for example gag and amberjack? Excuse me. Not gag. Amberjack and gray triggerfish. Then the other is just to clarify, in my own mind, and is this OFL an equilibrium value of some sort? I guess that was my understanding.

DR. SIEGFRIED: The benchmarks were calculated using the stock-recruit curve as well in equilibrium, and so that is the benchmarks, and that's what we're fishing at, is an F at SPR 40 percent. I looked back at the original amberjack, just because I was a glutton for punishment, and they are a much more similar OFL and ABC when the rebuilding plans started, because it was a longer timeline, if that helps.

CHAIRMAN NANCE: I think the other big change, I think, is, this one, we're using the stock-recruitment curve as-is, whereas, in amberjack, we're assuming the low-recruitment scenario, which added a real additional buffer to that, and so it's both the low recruitment scenario and the length of time for rebuilding that is the difference between these two.

DR. SIEGFRIED: Yes.

CHAIRMAN NANCE: John, does that answer your questions?

DR. FROESCHKE: Yes, and just one quick follow-up, and then I will butt out.

CHAIRMAN NANCE: Absolutely.

DR. FROESCHKE: In our status determination criterion though, if I recall, MSY is defined as a long-term value, and then, in years with a stock assessment, OFL is equal to MSY, but, in this context, it's not a long-term, i.e., what the maximum sustainable yield would be in perpetuity if the stock was at FMSY biomass.

DR. SIEGFRIED: Yes, and it's not going to be that until we get all of the -- Everything to MSY, and so it's working its way in that direction, and so fishing at FSPR 40 percent right now is not going to give you, you know, equilibrium MSY, right now, because the stock is not able to produce that.

DR. FROESCHKE: But, in the past, for other stocks, have you based the OFL, during a rebuild, off of a long-term equilibrium value for that?

DR. SIEGFRIED: Well, the first time that amberjack was set, it was set based on the stock-recruit curve, and so that would be -- That's what we talked about with amberjack before, was that was

the rebuilding plan was set based on. If we look -- We would have to time more time to do this, and it's in the document, but, if we look at say the SRFS run OFL, and you actually have the table all the way to 2047, which is when it rebuilds, you would see that the SSB matches SSB MSY, and they are at MSY, and then your F would probably jump up, because the stock was not at equilibrium condition, but that's so far in advance that projections are pretty unreliable at that point, but that's how we pull those benchmarks for SS, is by looking at what the stock would do in equilibrium.

I think the amberjack, and this is something that -- Roy is there today, but I think it was his suggestion initially, is, if we're not recovering with the amberjack by 2027 -- In the past, and we haven't quite gotten there, maybe our assumption about recruits is overly optimistic, and so that's why the amberjack recruits were dropped, instead of assuming some sort of average or assuming some sort of stock-recruit curve, as we are with gag. The recruits in that plot on the second slide are much lower, on average, than what we're seeing for gag. I think that was an assumption for amberjack. Thank you.

CHAIRMAN NANCE: Thank you. Harry.

MR. BLANCHET: Thank you. This goes to that discussion about recruitment. A lot of the recovery is basically, if you look at the -- You would expect, just using the SRFS runs, essentially, from five years out, you're looking at something over five-million recruits, climbing to eight-million recruits. If you look at what we have seen in recent years, we haven't seen that, and so a lot of that projection is really counting on that spawner-recruit relationship to help carry you over the finish line.

We don't really have anything solid, reliable recruitment indices, for a lot of these species, and, you know, it's kind of challenging to see that, because you're counting on chickens that haven't yet hatched, and you're counting a lot on those chickens to get you to your goals.

The other point was the comment, the public comment, yesterday regarding discards, and are we assuming -- I am a little bit concerned that the approach we're taking with regards to discards might be, again, optimistic. Because of how it's being done in the assessment model, we may not be able to have as much directed harvest, or as much harvest, because we may be underestimating what this discards are. That's all.

CHAIRMAN NANCE: Thank you, Harry. Roy.

DR. CRABTREE: I mean, Harry made some good points, and there is a lot of optimism built into what we're looking at here. As bleak as these catch levels look, and as harsh as it's going to seem to the fishery, but, I mean, you do see -- When you switch to the stock-recruitment curve, you get this big jump in recruitment, which may or may not actually happen, and then we are making assumptions that discards are going to come down substantially, and that's probably not going to be the case, and all of that indicates that these catch levels are set on the high side of where they should be.

CHAIRMAN NANCE: Thank you. Doug, please.

MR. GREGORY: Thank you. I don't really know why amberjack came back up, and I suppose somebody was comparing the two and wanted some explanations, but we have, with our recruitment estimates with gag, a similar, or more dramatic situation, than we had with amberjack. The last ten years of gag is less than a half of the previous ten years recruitment, and so I -- Dare do I ask what would all this look like if we used the same approach of assuming the last ten years average recruitment, instead of the spawning stock model? I know that's kind of probably a bomb, but it just came to mind. Thank you.

CHAIRMAN NANCE: Without even having to look at the data, I would think, if you're using that lower recruitment stream, it would -- The ABCs would be a great deal lower than what we're seeing here. Roy.

DR. CRABTREE: Yes, and I suspect you would never rebuild, and that's kind of a conundrum of all of these things. If these increases in recruitment don't happen as the stock recovers, then you're never going to rebuild to what you're projecting, and something in the environment then must have changed. I don't know if that's what is happening with gag, and there is sure a lot of reasons to think that maybe it has with amberjack, but I'm not sure how you get around that issue.

CHAIRMAN NANCE: We have proposed -- Go ahead, Doug.

MR. GREGORY: That would put the burden on you, maybe, to come up with an explanation for the council as to why we're doing the two assessments differently, when both are dramatically overfished, and I'm sure it's just different meetings, different thought processes, but some people are out there looking for consistencies, and this is one that is not consistent.

DR. SIEGFRIED: Mr. Chair, to that point?

CHAIRMAN NANCE: Yes, please, Katie.

DR. SIEGFRIED: I'm looking at the recruitment timeline for gag, the deviations and sort of way that SS has to model those deviations, and we saw that really low year in 2011, but there are four years, in the last ten years, that are right on average, and, for amberjack, which, if you look at the second slide that Bernie has pulled up, it was below average for all ten years, and some are much farther below than, on average, what we saw for gag, and so the group didn't even discuss this, because it wasn't quite as dramatic.

I mean, you all have the document, and you can take a look at the same thing I'm looking at, and I can give you the page number of the PDF, of the presentation, and it's page 17, but we didn't see the same thing for amberjack, and, also, the recruitment was low, except for four years for amberjack, since 1990, which is not what we saw for gag. We actually saw above-average recruitment in the mid-1990s through the mid-2000s, and so that's why it wasn't discussed, and I don't think it was ignored in one assessment and brought up in another assessment with the same pattern.

CHAIRMAN NANCE: Doug, to that point?

MR. GREGORY: Yes. When you go back to the 1980s, the recent landings do kind of match that, but, throughout the 1990s and 2000s, those recruitments were more than twice as high with SRFS and four-times higher than the last nine years, and so you can take an average based on different years, but, if you compare the ten years prior to 2011 and the nine years since 2011, there's a dramatic difference, and, to me, the logic is the same as with amberjack. I think it's misleading to say that there is four years of kind of reaching the average, because that average is influenced by the 1980s and 1970s estimates of recruitment, and so not a big deal, but, to me, the patterns are similar, and the difference between the previous ten years and the current ten years is statistically significant, by the way.

CHAIRMAN NANCE: Thank you, Doug. Josh.

DR. KILBORN: Thank you, and so this is the second species, as long as I've been on the SSC now, that we've talked about this kind of issue, where there's a potential regime shift in the recruitment, and we've definitely seen evidence, previously, of just an ecological regime shift in the Gulf of Mexico, in general, over time, and so I think, you know, we might want to start thinking a little more broadly, in terms of, you know, whether or not

various species or complexes have undergone these regime shifts and are fundamentally acting differently now than they were in the past and we need to, you know, readdress the way that we're thinking about some of these fundamental issues.

Again, this is -- I know that two does not make a trend, right, and two data points doesn't make a trend, but this is the second time in a year that we've discussed this issue, with two different species, and so I do think it's worth paying some additional attention to, moving forward. Thank you.

CHAIRMAN NANCE: Thank you, Josh. I agree with that point. Mike.

DR. ALLEN: Thank you, Mr. Chairman. I was just recalling our discussion about the amberjack, and it seemed like the case there was that there had been substantial management actions put in place without any recruitment response, and that was the argument for the regime shift, lower recruitment, using the lower recruitments moving forward.

With gag, we haven't done that yet, right? We haven't had that management change, and I think it's reasonable, and it could turn out not to be true, but it's reasonable to assume, given the very low stock abundance that it is right now, that, when we enact some management changes, we're going to see a change in recruitment, in response to that.

CHAIRMAN NANCE: Yes. Ryan, please.

MR. RINDONE: Well, just to be fair, the terminal year in the assessment is 2019, and we have had to make assumptions in the projections about the landings that would have occurred in 2020, 2021, and 2022. We don't know, specifically, what has happened with recruitment in 2020 and 2021, or this year, and we know what we've heard from fishermen, which was, that last fall and this spring so far, or this early summer, have been very good for gag, or at least for them being able to find and catch keepers, and maybe that means that, in 2018 and 2019, some of those fish have grown up and now been matriculated into being selected by the hook-and-line fishery, but, without that information, a lot of that just remains unknown, and those are assumptions that we have to make to make the projections work.

When we say what things are like today, really, it's -- Today is the end of 2019, with assumptions made about the interim years, and, just to, I guess, bring back to the forefront of the discussions that this body has had several times about the current nature of some of the information that we're able to look at, and

it's always a little bit behind where we are now, and then, by the time we actually get through with management, it's even more so aged, and so just some food for thought, to muddle the waters a little more.

DR. SIEGFRIED: Mr. Chair, to that point?

CHAIRMAN NANCE: Yes, please, Katie.

DR. SIEGFRIED: I appreciate all the conversation, and I brought up the regime shift thing when we were talking about amberjack, and so I think it's a good idea to keep an eye on that, but I do think Mike's comment is particularly apropos, because what we plan to -- Or what we hope to do is to monitor the stock very carefully with interim analyses, I mean any little change, any episodic mortality, any change in recruitment, any change in --

We do have signal from very young fish in one of our video indices in the Gulf, and so we should be able to pick up these signals and be able to keep track of it with interims, and I hope that this explanation is sufficient, and I certainly don't mean to drag greater amberjack back up, and it was just part of the request, to look at the differences between the two, but, if there's anything else that I can provide to clarify, just let me know.

CHAIRMAN NANCE: Perfect, and I appreciate the explanation. I mean, for my own personal thoughts here, I'm satisfied with the explanation, for sure, and I think, as we do the interim analysis -- As Mike mentioned, as we put this into play, we need to be careful and be able to watch the response of recruitment to this change, and, if we see that changing for the better, that's where we want to go. If we see no change, then we need to kind of reevaluate what we're doing and be able to make sure that we're following to get this stock rebuilt. Any other discussions from the SSC on this item? Carrie.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair. I guess, Dr. Siegfried, Katie, do we, in the report -- I think, when we went through amberjack, we had some very specific like projection settings that were detailed in the report, and is that something that we need to consistently do, it seems like, for gag, and I think we have, and I think we can do that here, but I just wanted to make that clear.

Then my other question is, regarding what was presented for the 75 percent of the F at SPR 40 or whatever, I don't think that was part of the SSC's recommendations, and so I don't know if the SSC did want to include that recommendation to the council, and would

you want to add that to your motion, or make it clear in the report, and I don't think we really discussed that in great detail. Thanks.

CHAIRMAN NANCE: Carrie, would you repeat that last part?

EXECUTIVE DIRECTOR SIMMONS: That bottom-right corner, and what is it?

MR. RINDONE: It's the yield at 75 percent of F at MSY, or its proxy, which is the -- So there's three scenarios that you can select from when Tmin is greater than ten years, and there is 75 percent of F at MSY, Tmin plus one generation time, or Tmin times two. I guess you could also select Tmin, but that would be -- That would hurt.

CHAIRMAN NANCE: I guess the question is we -- Yesterday, in our motion, we asked for Tmin, Tmin plus one generation, and Tmin times two, and I think, as a standard thing that the Center provides, the F equals 75 percent SPR 40 is a standard run that they typically do. I guess the question is do we want to include that in the package, and, if so, we need to probably include that in a motion, or, if we don't want to see this, we don't include it in a motion and we don't see it. Ryan.

MR. RINDONE: Well, Mr. Chair, I think the intent was to include the options that are available under the Act, and so this is one of the options that's available under the Act, and you guys have had the opportunity to evaluate it, and we certainly haven't heard anything mutinous on the record about it, and so, if there's nothing to contest that, we can simply update it.

CHAIRMAN NANCE: Carrie.

EXECUTIVE DIRECTOR SIMMONS: Well, I guess what I was trying to do is avoid confusion at the council meeting if the SSC wasn't explicitly recommending it. I mean, there is quite a bit of difference in the buffer, and so is that a recommendation or not? It wasn't included in the original motion, and we've had multiple discussions about this stock and amberjack, and so I think we just need to be clear, and that's all I'm trying to bring up.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Carrie, Dr. Simmons, and I really appreciate that point. I think that the intent of the motion yesterday, and our evaluation of this additional option today, is really to provide the council with the full latitude, right, of

determining the time horizon and the parameters for this rebuilding plan, and that we did not see anything technically faulty with these projections that would preclude the council from using each one of those options. I will defer to Dr Simmons and Ryan on whether, you know, we amend -- You know, we provide a different motion, a new motion, that would include this option, or --

EXECUTIVE DIRECTOR SIMMONS: I guess, in my mind, the difference is the buffer, and, if we're so concerned about this, are you in support of it, and I think we could probably add that to the report, and Dr. Nance can talk about it with the council, but, I mean, we did not talk about it when we had the last assessment review with the council in the last six months, and so that's kind of why I'm trying to bring it up and make sure that we're clear on that their intent is here.

CHAIRMAN NANCE: I think the key, in my mind, is that these scenarios are all based on the same projections, and it's just a different matter of one is Tmin plus one generation, one is Tmin plus two generations, and one is 75 percent FSPR 40, and so the model is creating these, or, excuse me, the projections are creating these, and there's nothing that we've seen that would invalidate this one, and so, from my perspective, it's a valid option, and, in our motion yesterday -- I think, when Luiz made that motion, it was outlining the general scenarios in the projections. We could include that in there, but I think it's not any different, from a scientific standpoint, to have it.

MR. RINDONE: So I said, although not contained in the SSC's previous motion about the catch limits associated with the different rebuilding timelines, the SSC stated that it thought the catch limits associated with the timeline using 75 percent of F at 40 percent SPR, which is one of the options when Tmin is greater than ten years, was a valid option for consideration by the council.

CHAIRMAN NANCE: I think that covers it. Katie, please.

DR. SIEGFRIED: Thank you, Mr. Chair. To Carrie's point, perhaps I can work with her offline to make sure that the information is in the table that she's requesting. I mean, after amberjack, we're trying to be very careful about making it explicit, and it sounds like you all have worked out the Tmin issue, and Lisa and Ryan were communicating about that by chat yesterday, but we don't even have a Tmin scenario prepared, I think because Ryan stated it would hurt, and that wasn't one of the three rebuild options that we have ever presented, and that would be thirteen years.

CHAIRMAN NANCE: Thank you, Katie. John, did you have your hand up?

DR. FROESCHKE: Yes. I did, and then I didn't, but I'm going to go anyway. I don't think we have a motion for the OFL, and it seems like we need that.

MR. RINDONE: John, the motion that was passed was the SSC determines that the yields corresponding to the rebuilding schedules, based on Tmin, which I can edit to be 75 percent of F at 40 percent SPR, Tmin plus one generation time, and Tmin times two are appropriately calculated and suitable for informing management advice. There we go. That one.

Ultimately, the OFL and ABC would be dependent upon which rebuilding schedule, based on that table that's also going to be included in the report, and I guess it's a question of if you guys think that you need to explicitly state the OFL equals this for this one, this for that one, this for the other one, or just say that it's noted in the table.

CHAIRMAN NANCE: Go ahead, John.

DR. FROESCHKE: Well, in response, I guess it seems to me that we typically put years and values on the board. Otherwise, to me, it implies that we are specifying ABCs all the way through 2047 at this point.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: To that point, and, Mr. Chairman, thank you, but perhaps we can just add -- Have another motion, and I don't know if we can amend this one, since this one has already passed, but we can add that table with the short-term, the five-year, scenarios, to this motions, and it can be amended to also include the yield at F 75 percent of MSY.

MR. RINDONE: I think you could just say, you know, the SSC determines that the OFL and ABC specific to the rebuilding timelines, outlined in the table, are appropriate, or something to that effect, because the table is going to be in here, and, that way, you're not trying to, in any way, write out fifteen ABC values across five years and three options, and so, if you wanted to make a new motion, because this is basically saying that you think that the way -- You think that the math is done correctly, and so the follow-up could be like we're recommending yields for five years and expecting that, within that five-year period, or 2024, actually, we're going to start another gag assessment.

Then, in the interim, we'll have a couple of interim analyses, probably, and so it's not like you guys aren't going to have your finger on the pulse of this, but that, within five years, you would expect to have seen quite a bit more information and have a better idea of where things are.

CHAIRMAN NANCE: I think we need a new motion, just to be -- Just to make it straightforward, and so, Luiz, if you could --

DR. BARBIERI: I am thinking, perhaps there, in terms of the language -- If you can just go to the previous one, Bernie. Thank you. **Appropriately calculated yield streams of OFL and ABC --** It's like towards the end of the last line of that motion. **Appropriately calculated and OFL and ABC yield streams associated with those values are suitable for informing catch advice.** Perhaps then we can put the five-year. **And five-year OFL and ABC.** Would that do it?

CHAIRMAN NANCE: I think so. Bernie, right after "ABC", it needs to be "yield", and then add, right after --

DR. BARBIERI: After "calculated" --

CHAIRMAN NANCE: Take the "and" out of "before Tmin times two", and let's put -- Then put "and" after that comma -- After "Tmin times two", right after that, then put "and 75 percent SPR 40", correct, so that that's one of the options, too.

MR. RINDONE: Well, it would be 75 percent of F at SPR 40 percent.

CHAIRMAN NANCE: Yes.

DR. BARBIERI: Before the first "OFL and ABC yield streams", that's where we put the "five-year". Thank you. Then we delete, after "advice".

CHAIRMAN NANCE: Okay. Are you happy with that motion, Luiz? Jim.

DR. TOLAN: Thank you, Mr. Chairman, and this may come across as a little nitpicky, but, because this motion carried without opposition, do we have every single person present that voted on this, because, if they go back and read, and so, wait a minute, this is not what I voted for, and so does this need a motion?

CHAIRMAN NANCE: This is a new motion.

DR. TOLAN: Okay. I thought we were --

CHAIRMAN NANCE: No.

DR. BARBIERI: We're just using the -- We're recycling.

CHAIRMAN NANCE: Yes. Thank you. This is a brand -- We have the one motion, and this is a brand-new motion to be able to add this, so we can put the tables in.

DR. BARBIERI: **So moved, Mr. Chairman.** If there is a second, then we can --

CHAIRMAN NANCE: Do we have a second for this motion? Roy. Okay. Discussion? Doug.

MR. GREGORY: Thank you. I'm a bit confused here, and I blame it on our process yesterday, and it just seemed so rushed, and I thought that Tmin was equivalent to F equals zero. F equals zero rebuilds the population in twelve years. I have not seen any tables of Tmin plus one generation until this morning, and so I'm confused why that would be eight years if Tmin is twelve years, and that's easy enough to answer.

The other question I have is, if we can rebuild the population sooner, why would we go to the extreme of Tmin times two, when we have a population that has been overfished and undergoing overfishing for fifty years? I mean, this is a very rare like pull-the-fire-alarm situation. Thank you, and so those are my two questions.

CHAIRMAN NANCE: Tmin plus one generation is eight years.

MR. RINDONE: (Mr. Rindone's comment is not audible on the recording.)

CHAIRMAN NANCE: Yes. Okay. We got that table last night. Shannon, did you have a comment?

DR. CALAY: Well, if Katie is online, she's probably the best person to clarify this issue.

CHAIRMAN NANCE: Okay. Katie.

DR. SIEGFRIED: Thank you. There is no rebuilding scenario put forward with just Tmin. Tmin is calculated when we did the F equals zero scenario. The Tmin plus one generation time is offered because that, plus the Tmin times two, plus the 75 percent FSPR 40 are the three options the council has. As to why you would go

with the longest one, I don't have a -- That's not my wheelhouse.

MR. GREGORY: Okay, and so the SSC is not recommending any one of these.

CHAIRMAN NANCE: That's correct. We're providing these to the council. We are satisfied with the science behind the creation of these, but recommending that the council can look at these and then choose the option that they would feel is best suited.

MR. GREGORY: If Tmin is twelve years, wouldn't Tmin plus one generation be twenty years and not eight? A generation is eight.

DR. BARBIERI: This is just clarifying what one generation time is for gag grouper, and it may be confusing.

MR. GREGORY: It is. It is confusing.

DR. BARBIERI: So this is why the "eight years" is after one generation time, because we know what Tmin is, right, and we want to clarify -- Yes, Ryan.

MR. RINDONE: I was just going to lob a friendly amendment at you to change "values" to "rebuilding timelines", and so "are appropriately calculated in the five-year OFL and ABC yield streams associated with those rebuilding timelines are suitable for informing catch advice."

DR. BARBIERI: Yes. **That's better, yes.**

MR. GREGORY: I would think, if we put in parentheses, after each of these, what they kind of represent -- After "Tmin", "F equals zero, twelve years", "Tmin plus one generation", and maybe not put the F, but put "twelve plus eight years". It's not clear now, and, in the past, we've taken great efforts to make our motions very clear.

DR. BARBIERI: Doug, I think I accept your friendly amendment, and so if you can help us craft the text after each one of those rebuilding -- Just put "twelve years" and then "Tmin plus one generation" --

CHAIRMAN NANCE: So "twelve years plus eight years" in the parentheses.

MR. RINDONE: Katie, how long does it take to rebuild at 75 percent?

DR. SIEGFRIED: It goes to -- 75 percent is to 2042, and so it's

one year less, and so nineteen years.

MR. RINDONE: Thank you.

CHAIRMAN NANCE: So Tmin times two would be twenty-four years. Perfect. Okay. Doug, is that satisfactory for you?

MR. GREGORY: Yes, and I appreciate that, but I would add -- After the "twelve years", add "F equals zero", so that nobody thinks that twelve years is a legitimate rebuilding period, and maybe I'm wrong, and maybe it is a legitimate rebuilding period.

CHAIRMAN NANCE: Okay, and so twelve years at F equals zero. Perfect. Thank you very much for those changes. Much appreciated.

MR. GREGORY: Thank you.

CHAIRMAN NANCE: Any other discussion on this motion? I am going to read the motion. **The SSC determines that the yields corresponding to the rebuilding schedules based on Tmin (twelve years at F equals zero), Tmin plus one generation time (twelve years and eight years for gag grouper, a total of twenty years), Tmin times two (twenty-four years), and 75 percent F 40 percent SPR (nineteen years) are appropriately calculated and five-year OFL and ABC yield streams associated with those rebuilding timelines are suitable for informing catch advice. Is there any opposition to this motion? Hearing none, the motion carries without opposition.** Thank you. That was well crafted, and I think that helps the council to be able to see where we're going. Tom, please.

DR. FRAZER: I think it's helpful. I guess the question that the council will have, right, and so you essentially have these three options that are in the slide here, and my inclination is that the council will gravitate immediately to the Tmin times two, right, for two reasons, one you get an ABC, essentially, that's higher than any of the other scenarios, with the highest degree of certainty, and so I think it's going to be important to be able to explain to the council, using these different scenarios, why there are differences in the certainty, right, or the scientific uncertainty, excuse me.

In one case, you've got, you know, the longest rebuilding time, and that's 7 percent uncertainty, right, and then slightly faster rebuilding times, but significantly higher uncertainty, and, in order for them to make a decision, they will probably want to know what the discussion was like, as it relates to this particular topic, and we just had this discussion, right, on ABC control

rules, and so, you know, when the SSC gives its report, probably we're going to want to be able to help in that regard.

CHAIRMAN NANCE: Yes. Thank you. Luiz.

DR. BARBIERI: To that point, Mr. Chairman, I agree completely, Dr. Frazer, and this is something that perhaps we can add some of that narrative to our meeting summary, right, so you have that outline already there. There we go. Even better.

CHAIRMAN NANCE: Perfect. Thank you very much for that discussion. We'll now go ahead and start our wenchman discussion, and I will turn the time over to Shannon. No, let me -- Ryan, the --

MR. RINDONE: Got it. The scope of work.

CHAIRMAN NANCE: Thank you.

PRESENTATION AND DISCUSSION: WENCHMAN DATA EVALUATION AND CONSIDERATION OF STOCK-SPECIFIC CATCH LIMITS

MR. RINDONE: I've got you. Dr. Cass-Calay is here to talk about wenchman and review what's known about its life history and distribution and directed landings and where it shows up in our fishery-independent surveys and our past catch limits, including what was used in the Generic ACL/AM Amendment for how we initially structured everything for that midwater snapper complex, and that complex also includes queen snapper, blackfin snapper, and silk snapper.

Wenchman landings have increased dramatically, about tenfold, in the last few years in the northern Gulf of Mexico butterfish trawl fishery, and they are essentially using these large midwater trawls, and, based on the information that you guys will hear from some of the fishermen that are present, and there's a couple in the back of the room, and I think we have a couple on the phone, and they will tell you about when they see them, how they see them, abundances, times of year, things like that, but, right now, it's kind of serving as a choke species for them for being able to go and fish for butterfish, because wenchman are causing the midwater snapper complex -- Wenchman landings are causing this complex to close, and we, obviously, don't want to be throwing back 20,000 or 30,000 pounds of them from a trawl.

They have approached the council to ask for reevaluation of wenchman and its catch limit, and so that's what all of this is for, and so you guys should examine the data and the results of the analyses the Science Center provided, ask questions,

especially of the fishermen, and they're here to tell you anything that you want to know about where and how they see these fish and make any recommendations to the council, as appropriate.

Things you can consider would be whether to recommend the council break wenchman out of that midwater snapper complex, and, if so, to consider catch limit recommendations, using the council's ABC Control Rule or other method that you deem appropriate.

CHAIRMAN NANCE: Thank you very much, Ryan. Shannon, please.

DR. CALAY: Yes. Thank you, Chair.

MR. RINDONE: I guess, before Shannon gets started, if, Andrew and Mike, if you guys could just come to the podium and introduce yourselves, and, if you want to sit back there by the podium, near a mic, that would be great. That ways, as we're going through this stuff, if the SSC has questions, you can more readily respond. You can do that or just sit down and introduce yourselves, so they know who you are and we can get your voices recognized.

MR. ANDREW BRYANT: I'm Andrew Bryant from Bryant Products, and we have been processing the wenchman with our butterfish, and they've exploded in the past couple of years. We've done the butterfish boats for a while now, but the wenchman have been coming in more with the butterfish, the past couple of years, and I think my dad is online, with Captain Murphy, possibly, and I'm not sure yet.

MR. MIKE GRIECO: My name is Mike Grieco, and I'm with God's Grace Holding, and we have one of the vessels that are fishing for butterfish right now in the Gulf.

CHAIRMAN NANCE: Thank you. We greatly appreciate you being here. I think let's go ahead with the presentation, but the gentlemen are here for questions, either during the presentation or -- Bernie.

MS. ROY: Glen Bryant, do you want to unmute and introduce yourself?

CHAIRMAN NANCE: What we can do is while -- We can go ahead and, Shannon, start your presentation, and hopefully we'll be able to -- You can relay what your dad says, maybe, or something like that. That would be perfect. Thank you so very much. Go ahead, Shannon.

DR. CALAY: Thank you, Chair, and I wanted just to take a moment to thank the fishermen who have attended this meeting. It is extremely important to hear your experiences on the water, and so

we really do appreciate that you've come, and I wanted to acknowledge, also, that I spoke with Captain Phil Early, who also contributed information for this presentation, and so it is very helpful, indeed.

I would like to also acknowledge Dr. Peter Hood at the Southeast Regional Office and Adam Pollack at the Southeast Fisheries Science Center, who both either allowed me to use slides that they had developed and presented earlier or who contributed to this presentation.

Currently, wenchman are managed as part of a complex. It is the midwater snapper complex, and it includes four members, the silk, blackfin, and queen snappers, as well as wenchman. Wenchman are typically found over rough bottom features, and they tend to be in deeper waters, and they are found from twenty-four to 370 meters, usually deeper than that, at fifty to 250 meters, according to FishBase. The fishermen testimony that I heard, prior to this meeting, is that they're most often catching them in waters seventy meters or greater.

Their maximum length, according to FishBase, is about fifty-six centimeters total length for the male or unsexed fish, but they're more commonly smaller, at a twenty-centimeter total length. We have records of their length, which I have shown you here from our NMFS groundfish survey, which range from twenty millimeters, and I believe that's meant to be twenty centimeters, to 260, and that makes sense, twenty to 260 millimeters, but the maximum length of observed in our NMFS groundfish survey is forty-seven centimeters fork length, and, in the commercial longline, a little larger, about fifty-six centimeters fork length.

I just wanted to preface this conversation that it's a little bit atypical, because this species is landed by few fishermen, who, if they are commercial, report to few dealers, and so there are confidentiality issues with releasing the information by state and year, for example, and, in some cases, even by year, which makes presenting these landings information difficult. We have reached out to the dealers, who are responsible for reporting the commercial landings, and we have obtained their permission to show you the annual landings of wenchman.

Recreational landings are very negligible for this species and account for less than 0.2 percent of the total removals, on average, and, just to give you kind of an idea, that's about 300 pounds a year, at the most, for the recreational landings, and so this is essentially a commercial species. The commercial landings come mostly from trawls, and that's about 93 to 99 percent of the

landings between 2014 and 2020.

The current management advice for the midwater snapper complex is described in the 2011 Generic Amendment for the Annual Catch Limits and Accountability Measures. That amendment set the OFL, the acceptable biological catch, the ABC, the annual catch limit for the complex, the ACL, and an annual catch target, and these values are shown here in millions of pounds. For example, the OFL was established using Tier 3a of our tiered control rule, and it is 209,000 pounds whole weight.

In order for this SSC to reevaluate whether to create a species-specific OFL and ABC for wenchman, there are a number of outstanding questions that the SSC must deliberate and provide a decision about.

The first question is whether or not to separate wenchman from the current midwater snapper complex, and, as Ryan alluded to -- I show you, here on the right-hand side top, the annual wenchman landings from the rec and commercial sectors combined from 1999 to 2021, and so there is an abhorrent year there, 2019, which has extremely low landings, but, in 2020 and 2021, we see a rapid acceleration in the catches of wenchman. Those are predominantly commercial landings.

I will remind the SSC of some of the previous advice given by the Science Center regarding complexes, and so a complex ought to include members that have a similar life history and a similar vulnerability to the fishery, and so, essentially, all the members of the complex -- If you were to control any one member of the complex, you should execute the same sort of change on the catches of the other members of the complex, because they should be, you know, caught by the same fisheries in the same sorts of places, and that's the general guidance about the membership of a complex.

We have heard some angler testimony, and this comes mostly from Captain Early, that wenchman are often caught in association with butterfish and scad, and so one of the points of information that this SSC would likely want to know is what are the species associates of wenchman, and are there methodologies to target wenchman and not, you know, collect bycatch, necessarily, of a weaker member of a complex, for example.

On the bottom panel, and I do apologize that the colors may be difficult to read, but I have actually shown you here, in red, are the landings of wenchman relative now to the other members of the complex, and, as you can see from that figure, the landings of wenchman are actually increasing both in absolute magnitude, but

also as a proportion of the catch in that complex, and so, in fact, you are more likely to catch wenchman now in the complex than the other members of the species, of the complex.

If you exclude wenchman from that plot, and let's just put it that way, there doesn't appear to be any particular trend in the catch of the other members of the complex. What you really do note is that wenchman has increased, both in absolute magnitude and as a proportion of the complex.

The second question would be whether to continue to use Tier 3a of your tiered control rule, and so the conditions for use of Tier 3a are that no assessment is available, but the landings data exist, and that is true. Tier 3a says that, based on expert evaluation and best science information available, the recent historical landings are without trend and/or landings are small relative to stock biomass, or the stock is unlikely to be undergoing overfishing and unlikely to undergo overfishing if future landings are equal to or moderately higher than the mean of the recent landings, and that's from your own tiered control rule.

Tier 3b is for -- If, based on expert evaluation, the recent landings may be unsustainable, and so, really, Tier 3b is for stocks that we feel might be at risk of being overfished or undergoing overfishing.

What do we know about the recent catch rates from our fishery-independent surveys about wenchman, in particular? This information was all provided by Adam Pollack at our Southeast Fisheries Science Center.

Wenchman, as you may recall, was last assessed in SEDAR 49, our data-limited species process, but that assessment was not used directly to produce management advice, and so, essentially, no assessment is available that was used to produce management advice. There was a representative index defined by that process, which was the Southeast Fisheries Science Center small pelagics acoustics survey, and that had full coverage across the Gulf of Mexico at depths where wenchman occur, and it had a very high positive occurrence.

It was available from 2002 to 2013, at the time of the SEDAR 49 assessment, and the gear is a high-opening bottom trawl. Unfortunately, that survey ended in 2016, and, in 2014 and 2016, it had very limited spatial coverage, due to vessel breakdown, and there was no survey in 2015, and so, unfortunately, not much has been updated about that information since SEDAR 49, but I will give you, you know, just a broad overview of what that index looked

like.

This is the coverage of that index, and the red dots actually indicate the numbers per trawl hour, and so it has broad spatial coverage, and it goes out into deeper waters, which is ideal, and it shows that the stock of wenchman, you know, is more broadly distributed, or more abundant, in the west and in the northern part of the eastern Gulf of Mexico.

This is what the index looked like, and so, at the time, we saw an increase towards the end of that survey, but no more recent information has become available. You see an increase in the most recent years, in 2012 and 2013, but no more recent information can be made available.

We also have a SEAMAP groundfish survey, which is primarily a western Gulf of Mexico index, and it is a combined summer and fall survey. It has a split time series, due to a change in the survey design in 2018, which expanded the sampling universe and standardized the tow to a thirty-minute tow. We now can include data up to Cape San Blas, Florida, where, previously, only through Mobile Bay, and there is very little catch east of Cape San Blas.

Here is the old design of the SEAMAP groundfish survey, and you can see it was predominantly a western survey, and the new design, which is a greatly-expanded survey coverage and the different trawl. Here is the new design, with the expanded coverage and the standardized tow.

Now, of course, these are no longer comparable, necessarily, the two time periods, but you will see -- I think I would describe this as largely without trend and variable. There is some indication that the most recent year of these surveys, this survey, the expanded coverage, is lower, but the CVs are also very high, and so it's unclear that that really has a significant trend.

We have a SEAMAP reef fish video survey, again primarily a western Gulf index for wenchman, and it is updated through 2019, and so this has the most current information, and this samples high-relief offshore natural reefs, and it is similar to the SEAMAP groundfish survey, in that it has low, or no, catches reported east of Cape San Blas. It has low positive catches, less than 5 percent, and so that is one concern about this survey, and we do have a SEDAR 49 working paper that describes this in more detail.

This one does indicate a very large increase in the relative abundance of fish, in the western Gulf at least, and so, unlike the other surveys, which are largely without trend, this one does

indicate that there has been an increase in abundance recently. That is essentially the information that we have available from our survey program about wenchman.

CHAIRMAN NANCE: Shannon, can I ask just -- On that video survey, that is just SEAMAP, and that doesn't include any of the Florida video?

DR. CALAY: Correct, because of the -- The request had a short fuse on it, and so what we were able to do is pull the updated information from the SEAMAP program, because they actually have put a great deal of time and effort and resources into updating those annually.

The next question in front of the SSC is whether to reconsider the reference years that are used in the calculation for OFL and ABC. These all rely on a mean and standard deviation during some reference year period, and on the left-hand side is a plot that comes directly from the Generic Amendment in 2011, and the blue part is actually the part that was not used to produce the OFL and ABC for any of the midwater snappers. The period of time that was used is shown in white, roughly. Roughly.

What you see in wenchman, which is the bottom of that left-hand plot, is that there was, essentially, an expansion of that fishery that occurred in the blue, in the early part of the time series, but the part in white indicated largely a fishery that had relatively stable catches, and so that is why that period of time was selected by the SSC to represent a period of time in which there appeared to be stability in the landings of that fishery, indicating that perhaps the stock biomass was relatively stable, although it is difficult to make that leap from catch only, I will add.

What you have here now on the left-hand panel are the landings since 1999, and so there is some overlap here that I actually presented on purpose, just to kind of give you an idea that these are in fact a consistent series of landings, and, in recent years, you see that large expansion in 2020 and 2021. 2021 could still be somewhat provisional, in that I believe the estimates were provided only through Wave 4.

It hardly matters, because the recreational landings aren't very large, but I'm just saying that it's marked "provisional" in our NOAA -- So please take it somewhat with a grain of salt, that it could be updated, and the next estimate could be somewhat different.

I think that this -- There is a need to recall that very few vessels actually catch wenchman intentionally. It is largely -- Well, I will let the fishermen actually fill you in more on the details of the fishery, but what I'm getting at is that 2019 has extremely low landings, and I wouldn't automatically presume that that is because the population was small, and I would allow the fishermen, perhaps, to comment on why 2019 landings might be so different.

I do suspect, and I could confirm with our Fisheries Statistics Division, if needed, that it probably has more to do with whether there was anybody fishing for butterfish in 2019.

I would say it's probably more -- I don't know. You can leave it to your own opinion and ask the fishermen, but I just wouldn't automatically come to the conclusion that, because the landings were small, that that would be an indication that the stock size was small.

The fourth question, and the last, is whether to continue to use the default OFL and ABC that are indicated in our tiered control rule, and we did use the defaults -- No, we didn't, actually. Yes, we did. Sorry. Okay, and so the default is to set the overfishing limit equal to the mean plus two standard deviations for the OFL, and, for the ABC, to have the mean of the landings plus one standard deviation, and so those -- I have prepared a spreadsheet, and circulated it to Ryan and to Bernie, that would allow us to select reference years and potentially explore these different options, if there was a need to.

All right, and this is actually a slide -- If, for whatever reason, the SSC decided to use Tier 3b, assuming that the stock could be subject to overfishing, then the -- It's actually that the OFL would be set at the mean of the landings, and the ABC would bet set below that mean, using one of these options, and so I also -- In that spreadsheet, we can calculate these as well.

All right, and so, just rapidly, the conclusion of this presentation is that we have the information needed to calculate OFL and ABC for wenchman, and also for the other members of the midwater snapper complex, if that was desired. We need to know which tier of the ABC Control Rule to use, the reference years to select, and which of the reductions from OFL to use to calculate ABC. That's it, and so, if there are any questions for me or for the fishermen who have graciously agreed to participate, we are ready and available.

CHAIRMAN NANCE: Okay. Thank you. I have two, and it looks like,

to me, that you are not targeting wenchman during your fishing activity, and you are targeting butterfish, and wenchman is a bycatch. Is that -- Okay, and so there's -- Because you're targeting butterfish, and wenchman seems to be highly associated with butterfish -- Are they always associated, or there are certain times of the year when they are not associated?

MR. BRYANT: Usually you get a little amount of wenchman when they're butter fishing, and scad, but --

CHAIRMAN NANCE: Okay, and are there -- With the other species in this complex, are there others of that complex that are also caught with butterfish?

MR. BRYANT: No, there's not, not as far as -- I mean, I'm the processor, and so I see the -- For the most part, I do not remember seeing any of those other complex fish species in the catches at all.

CHAIRMAN NANCE: Okay, and so, from a life history standpoint, they seem to be disassociated with butterfish and that type of thing.

MR. BRYANT: Yes, sir.

MR. GRIECO: Out of that complex.

CHAIRMAN NANCE: Roy, please.

DR. CRABTREE: Thank you for being here. What is the market, ultimately, for wenchman? I mean, is it for human consumption, or what are they being used for?

MR. BRYANT: Absolutely. It's something that is still a developing market, and so, I mean, we have found adequate sales for every pound of wenchman that has come through our doors. Every pound has gone out for human consumption only.

SSC MEMBER: Are you mostly selling them to restaurants or to shops or it's hard to say?

MR. BRYANT: It's hard to say, but they're all over the country, to New York, California, Houston. I have different customers, and they have different uses for them.

CHAIRMAN NANCE: Josh.

DR. KILBORN: Thank you. I'm curious what the proportion of the

total catches that is associated with bycatch or other target species is and how much is actually targeted, and then, as a follow-up question, has the number of people targeting wenchman increased in recent time? Thank you.

MR. BRYANT: It's one or two boats that are currently targeting butterfish, and wenchman as a byproduct of --

MR. RINDONE: Josh, I think butterfish is the target species, and wenchman is caught as bycatch. They're not going out on a wenchman trip. They're going out on a butterfish trip.

DR. KILBORN: Right, and so my question is that all of the landings that are reported, in all of the catches, are associated with bycatch and not target catch, correct?

MR. RINDONE: Right. It's a non-target, marketable species.

DR. KILBORN: Very good. Thank you.

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: Kind of following Josh's line there, I was wondering, and so, if it is a non-targeted, marketable species, as the market emerges, are we going to have -- I mean, is the thought process here that there's going to be increased landings over time? I mean, think about just a couple of boats targeting the species, and you hit the threshold, and the distribution of the species seems to be fairly wide across the board.

The profitability of some of the fleets are going down, and I'm kind of wondering if this isn't a species that might be turned to just as an additional one to keep in the hold to make money, especially if a market forms, and so I just wonder about the decision that we made, or the recommendation that we make, and how quickly it might be revisited, if this truly does increase in profitability.

MR. RINDONE: Andrew, when the fishermen are trawling for butterfish, are they able to differentiate, and Mike as well, and is it possible to differentiate between butterfish and other species that are kind of schooled up in the column as you're pulling -- As you're making tow, or does it just come back as backscatter of a school of fish being down there, either diffuse or congregated, and like how does it appear? Are you able to tell the difference?

MR. GRIECO: In the meter, they come up basically as scad and

butterfish, and, when you pull them up, there's going to be some wenchman in there, a good part of the time.

MR. RINDONE: I remember, from reading Captain Murphy's notes, that he said, the longer you're towing, the more likely you are to end up with things like scad and white trout and wenchman and other things like that and not butterfish, and that, usually, when you guys get into the butterfish, you don't have to make a very long tow before you need to bring the net in, but, if you have the net out for two-and-a-half or three hours, whatever it might be, a more extended period of time, the odds of you coming up with more wenchman, or other species that may be associated with butterfish, is going to be higher, and is that still true for today?

MR. GRIECO: Yes, and it just depends on how dense the fish are. If they're dense, it's going to be a shorter trawl. If it's not dense, it's going to be a longer trawl.

MR. RINDONE: Captain Murphy's notes made it seem like wenchman tend to be more diffuse, as opposed to it being like a really large aggregation in one spot.

MR. GRIECO: They're more scattered.

MR. RINDONE: I guess, Trevor, I'm trying to ask all these questions as a way to answer yours. Is that getting where you think you need to be?

MR. MONCRIEF: I think so. I mean, kind of the thought process here is that you don't -- I would hate to -- I want us to go down a route to be able to keep the fishery rolling and the fishermen profitable and all that stuff, and I know what happened with this last one kind of upended this decision process, or this recommendation process, and so, rather than just, you know, thinking about it in this one instance, I am trying to think a little bit further forward and try to figure out a way where this kind of situation doesn't happen again to this species.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: So I guess wenchman has closed, the snapper complex, has closed, in the past? When it closes, you keep fishing for butterfish, because that's what you're targeting, and the wenchman just are going over the side, and you throw them back?

MR. GRIECO: Right.

DR. CRABTREE: But it's not enough of your income that you would

stop fishing, and you would still go out and catch butterfish, right?

MR. GRIECO: That is correct.

CHAIRMAN NANCE: From my -- Butterfish is used -- How is butterfish used?

MR. RINDONE: (Mr. Rindone's comment is not audible on the recording.)

CHAIRMAN NANCE: Okay. So it goes through the same process as the wenchman?

MR. RINDONE: Yes.

CHAIRMAN NANCE: Okay. Thank you. Jim.

DR. TOLAN: Thank you, Mr. Chairman, and thank you, guys, for being here. The question I have is really more a technical question for Shannon, and, as a complex, how close are we hitting the current ABC numbers now, as a complex for the whole? Thank you.

DR. CALAY: Well, that figure actually appears in the SERO presentation, and I think, in 2021, we were very close to, or above, and it was the wenchman landings that actually, you know, were the largest part of that catch, and so, yes, that is -- I mean, Ryan can probably speak too to this, but that is, you know, why we've been asked to evaluate this, is it is the wenchman landings that are actually, you know, closing some of the fishery for the mid and deepwater snappers.

MR. BRYANT: Currently, I think the landings for the midwater complex are like 55,000, based off the online data that currently exists, or something like that.

DR. CALAY: For the midwater complex, it's higher than that. I mean, I think I just showed --

MR. BRYANT: But, I mean, that's the last time that I looked, and it was like 58,000, or 55,000, something like that.

DR. CALAY: There are some confidential landings that can't be shown on public websites, but I have gotten permission to actually show the data, and if you can just go back.

MR. RINDONE: On the ACL monitoring webpage right now, which is a little bit delayed, it's showing about 50,000 pounds as having

been landed to-date for the entire complex, and it doesn't differentiate between the species in the complex, and so that's all four species combined, and it does show about 9,500 pounds of recreational landings, but I would liken most of those to being silk and queen snapper, as opposed to being anything else in that complex.

CHAIRMAN NANCE: Okay. Harry.

MR. BLANCHET: This goes to the question of landings. How much of the blackfin, silk, and queen snapper are taken by trawl?

MR. GRIECO: Very little that we see.

MR. BRYANT: None that I'm aware of, based on previous landings.

MR. RINDONE: Harry, queen snapper especially are reef-associated, and they're pretty fast, and they fight pretty hard. They're popular in southwest -- Where is Eric? Is Eric still back there? Do you want to say something about queens?

MR. SCHMIDT: The queen snapper we call ball bats, because they look like baseball bats, and the blackfins are called hambones, and the silks are called yelloweyes. Did you just say there's only been 9,500 pounds of rec landings this year?

MR. RINDONE: Well, that's so far, and you've got to remember the lag for the MRIP program.

MR. SCHMIDT: That's grossly low. I mean, it's really grossly low. The deep-drop fishery has really exploded in the last fifteen years. The technology for fishermen, braided line, the gear, and you have companies that are selling images of side-scan sonar that you can just plug into your bottom machine, but the numbers here on page 19 -- It shows 3,800 pounds of hambone snapper, and I used to do that a trip. I don't know where these numbers were derived from, and, during public testimony, I am going to recommend the council remove wenchman from the complex.

Now, we do catch wenchman, but that's when we're fishing for ball bats and yelloweyes and so forth, but, once again, we closed last year in June, and I have friends of mine that run charters, headboats, and they have directed trips to go deepwater fishing, and you can't target just the groupers without catching the snappers.

If you pull something up in 600 or 700 or 800 or 900 feet of water, it's dead, and so now you're going to be throwing away a whole

bunch of fish for no apparent reason, and so, if you could somehow work on a specific way to pull those fish out and manage them separate, and allow us to keep those deepwater fish, because it sounds like we're going to have another deepwater snapper closure this year.

I'm also hearing that red grouper are probably going to close at the end of July or the beginning of August, and we're running out of stuff to catch, and, when the red grouper is closed, there's going to be more effort.

Now, of course, it's the summertime, and the weather is nicer, and there's going to be more effort to go to the deepwater, and so, if we're going to close these fish, we're just going to throw these fish back dead, and, if you would like to know how many fish are actually being caught, there is a couple of deep-drop sites on Facebook, and you can spend the afternoon looking at that, and you will say we probably caught more than 9,500 pounds for the recreational side.

CHAIRMAN NANCE: Thank you. John.

MR. MARESKA: What is the average size of the wenchman that you are capturing?

MR. SCHMIDT: They're small, about this big.

CHAIRMAN NANCE: Harry.

MR. BLANCHET: The point I was trying to approach was the question about is, as Shannon had alluded to, is wenchman still appropriate to be part of this complex, and the question that I had regarding landings was more directed at the NOAA landings group for looking at landings by gear, to see if the other species are primarily being taken by hook-and-line, and wenchman is primarily being taken by trawl, then there is a simple argument that this is no longer appropriate to be considered as part of that group. However, if the landings for other species are also being taken by trawl, then it's not as simple of a process as that, and so that was the question. Thank you.

CHAIRMAN NANCE: Thank you, Harry. We'll go ahead and hear from Josh, and I'm going to take a lunchbreak after Josh. Go ahead, Josh.

DR. KILBORN: Thank you, Mr. Chair. I'm still kind of trying to wrap my head around the whole idea of why we might have increased landings here, and what I'm trying to wrestle with is whether or

not we're making an assumption of whether or not there's just a larger population or there's been a change in the catchability somehow, related to gear or some ecological consideration.

I definitely, you know, am kind of trending towards the idea that wenchman shouldn't be included in this complex anymore, but, in the back of my head, I'm really kind of struggling with this idea of whether or not there's been a change in the stock or a change in the fishing activity, and kind of how we react based on that, and I don't know if we'll ever actually figure out the answer to that question, but that's really been nagging at me this entire time, because I don't think that we can actually tell the difference between those two things, given the data that we have, and so that makes this a particularly muddied question, in my mind, and so thank you.

CHAIRMAN NANCE: Thank you, Josh. Trevor, you snuck in.

MR. MONCRIEF: I will be quick, and I'm just following-up from Josh. I mean, to me, this is seeming like it is more of an underexploited species that now has gone profitability by having a market, and so, I mean, as I go through this, and as we think about it and discuss it as a group, that's the kind of thought process I'm going with here, is that this is an exploitable stock that has been unexploited for a while, just simply because the market hasn't been there.

If you look at the distribution that you see from the fishery-independent surveys, my thought process here is that, moving forward, we just need to make sure we've got it set up so that we kind of take it from that role and try not to limit it to where another problem like this is going to occur if just two or three boats are adding to the fishery, and so that's it.

DR. KILBORN: I just want to follow-up, real quick, because that kind of gets back at what I was alluding to earlier with the idea of whether or not there's been an increase in the number of people fishing for these fish, or at least landing them, because the answer to that question was, if there's only a few people that are accounting for these landings, does that mean that they're the ones who are responsible for, you know, fishing harder for this fish now, or at least making more landings, or is something else going on, and that's all. Thank you very much.

CHAIRMAN NANCE: Thank you. Go ahead and respond to that.

MR. GRIECO: There are two active boats right now, and, in 2020, there was only one. 2021 was only one, and the 2022 has been

active, too.

MR. RINDONE: Again, I think the thing to remember is that they're not going out looking for wenchman. They're going out and looking for butterfish. The landings of butterfish for these vessels -- Like that's -- Not to be puny with it, but that's the bread-and-butter of why they're out there.

It's not try to target wenchman specifically, but they just happen to have been able to develop a market for selling those fish as a food-grade fish in the last couple of years, and so they're not looking for them.

MR. GRIECO: It's just you can't target the butterfish. You're going to get other species in there, and the wenchman are part of it some of the time.

MR. BRYANT: If you close the wenchman, you're going to close the butterfish and the scad.

MR. RINDONE: It's like a choke species, essentially.

CHAIRMAN NANCE: Okay. Thank you.

DR. KILBORN: So then, previously, they were always just tossed over and not marketed, and is that correct?

MR. BRYANT: Not that I know of, and I have some data from -- I think it's from 2021 to -- They've always been used, but it's just the amount in the past two years, and they have been used.

CHAIRMAN NANCE: I know butterfish has been prosecuted ever since I can remember, and so I guess we can think about this after lunch, but have you always had wenchman as a bycatch, and is it, all of a sudden, just within the last few years, become an issue, where you're seeing more wenchman as bycatch, as opposed to in the 1990s and early 2000s?

MR. BRYANT: I wouldn't say it's an issue, because it has a viable market for them, but, yes, it's part of the catch that we have been able to use.

CHAIRMAN NANCE: Okay.

MR. BRYANT: It's not a problem.

CHAIRMAN NANCE: Yes, and I probably said it incorrectly, and I just wanted to know, because butterfish has always been sought

after, but has wenchman always been caught at the same level?

MR. GRIECO: We're seeing more of it in the last two years.

CHAIRMAN NANCE: You're seeing more over the last two years. Okay. Thank you.

MR. BRYANT: But, like from that graph, it's not -- It doesn't seem like it's an unknown, because, in 2001, there was 120,000 of the complex caught, and I don't know whether to assume that's wenchman or not, but, based off the left graph, it probably was wenchman.

CHAIRMAN NANCE: Okay. These are items to think about over lunch, and we will reconvene at 1:15. Have a great lunch.

(Whereupon, the meeting recessed for lunch on July 8, 2022.)

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July 8, 2022

FRIDAY AFTERNOON SESSION

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The Meeting of the Gulf of Mexico Fishery Management Council Standing and Special Reef Fish, Special Socioeconomic & Special Ecosystem Scientific and Statistical Committees reconvened on Friday afternoon, July 8, 2022, and was called to order by Chairman Jim Nance.

CHAIRMAN NANCE: We'll go ahead and start our discussion where we ended. The first topic that I want to talk about is Question Number 1 of do we feel like we have enough information, and do we want to separate wenchman from the midwater snappers, and so let's talk about that first. Ryan.

MR. RINDONE: Thank you, Mr. Chair. I'm going to send something here to Bernie, and these are handwritten landings notes that Mr. Glen Bryant had sent me from the late 1990s through the mid-2000s that show butterfish landings that -- Judging from what Shannon was able to pull up from the federal fisheries database, these landings may have gone directly to the state dealers and not to federal seafood dealers, and so there may be a gap in, I guess, our knowledge of landings there, but this is one vessel that is landing anywhere from 500 to thousands, and, at one point, three-million, pounds of butterfish a year, for this one vessel. This

was sent to us for the purpose of this meeting.

CHAIRMAN NANCE: What year does that start, Ryan?

MR. RINDONE: Andrew, before I sent this to --

CHAIRMAN NANCE: Is that what showed me in the back?

MR. RINDONE: Do you know what your dad sent me is Captain Grumpy's records?

CHAIRMAN NANCE: It looked like it started in 2000, I think.

MR. RINDONE: It's 1997 through the mid to late 2000s, and so is this -- I would kind of like you to say it --

MR. BRYANT: As far as I'm aware of, that's the reason that Captain Murphy shared those documents with him, in order to share with you.

MR. RINDONE: Okay.

MR. BRYANT: As far as I'm aware of, he didn't have any objections to sharing that data.

MR. RINDONE: Okay.

DR. TOLAN: Ryan, having got to look at that with you, just real quickly, can we get a confirmation on, because it's handwritten, what you guys are calling wenchman in this dataset? Is it silver, silver snapper?

MR. RINDONE: He has it listed in here --

MR. GRIECO: We call them golden threads or wenchman snapper.

MR. RINDONE: He has it listed, on the third page, as silver snapper, and then, in parentheses, wenchman.

MR. BRYANT: When he writes "silver snapper (wenchman)", that is wenchman.

DR. TOLAN: The reason I say that is I want to make -- Because we're really comparing the butterfish numbers to the wenchman numbers, and I want to make sure we have the -- There's a whole bunch of species listed, and so we're looking at the right columns, that everybody looks at the same information, and so thank you.

CHAIRMAN NANCE: Do you want to wait to see that one, Ryan, until we have that?

MR. RINDONE: I am sending it in now.

CHAIRMAN NANCE: Okay. Shannon.

DR. CALAY: In answer to another question that came up prior to lunch, it does appear that the blackfin, silk, and queen snappers are primarily caught by hook-and-line and not by trawl.

CHAIRMAN NANCE: The two things I've noticed, during our discussion, is it seems like three species in the complex are hook-and-line targets, and they seem to be southern Florida. Wenchman seem to be more targeted by trawl, and they seem to be northern Gulf -- Texas, northern Gulf, and the Panhandle of Florida, and so they don't seem to overlap, as far as area, much, and they don't seem to be -- From a standpoint of other things, they're different -- The wenchman seem to be different than the other species within that complex. Benny Gallaway. Go ahead, Benny.

DR. GALLAWAY: It strikes me that most of the fish, wenchman, taken in trawls are small. Would you -- I'm on the telephone, obviously, and so I missed some of the discussion of how these small fish are marketed and used, and what do we know about habitat utilization by life stage? Are we looking at juveniles taken in the trawl sample, or are those fish, some of them, reproductively mature? Are we looking at the entire population size spectrum or only a certain fraction of it? Thank you.

CHAIRMAN NANCE: Thank you, Benny. Will.

DR. PATTERSON: Thanks, Mr. Chair. A couple of comments. Dr. Nance just mentioned that the other three species tend to be targeted by hook-and-line and predominantly are south Florida, and I do know that like queen snapper are targeted by some folks in the northern Gulf of Mexico, and wenchman are sometimes caught hook-and-line, and I don't know how that shows up in the fisheries data, but it appears that wenchman have slightly different ontogenetic habitat utilization than the other three species.

Wenchman, you know, routinely are captured in the trawl surveys in the western Gulf, out in deeper water, toward the shelf edge, while the other species are typically not. Wenchman don't get real big, about 400 millimeters fork length, and we've aged some wenchman, and the oldest fish that we've aged is in its fifties, and we have several samples, a few samples, that are in their twenties and thirties.

That hasn't been validated yet, those age estimates, and they're actually -- For a deepwater reef fish, they seem to be pretty easy to age, but -- Obviously, none of that has been peer reviewed at all, but it does appear they have a different life history, but I wouldn't say that the other three are restricted just to south Florida.

CHAIRMAN NANCE: No, and I agree. What I was meaning was more predominantly, and would you agree with that, that they seem to be predominant to south Florida, or do you think -- Will, would the queens be -- I know they occur in the northern part of Florida, but are they as abundant there as they are in the southern?

DR. PATTERSON: I don't know. I don't know about the relative abundance.

CHAIRMAN NANCE: Okay.

CHAIRMAN NANCE: I don't think they're nearly as targeted in the northern Gulf. There is a fishery around the mouth of the Mississippi River, in deep water, and into the western Gulf. You know, there are different for-hire fishermen that are moving out into deeper water and trying to develop different fisheries. Obviously, the deep-drop reef fish fishery is one that at least has had a little bit of an uptick in recent years, and, you know, I haven't really gone into the landings data to examine any of those trends, but I do think that, you know, queens, at least, are targeted, to some extent, but maybe it's a small component of the total landings in the northern Gulf.

CHAIRMAN NANCE: Thank you, Will. Here we have on the screen landings from -- It looks like it's butterfish and WT, white trout, scad. Silver would be the wenchman, and so, on that one, that first line, there were more wenchman caught than butterfish, I'm assuming. The first line, and I'm just saying on the first line, there were twenty-five butterfish and 102 wenchman.

MR. RINDONE: Mr. Chair, if we go down -- He has totals at the bottom.

CHAIRMAN NANCE: I'm just saying so far, and I'm reading it.

MR. RINDONE: So, for this particular year, it's about 700,000 ponds of butterfish landed to about 10,000 pounds of wenchman, but the amount of wenchman landed in any given year was assumed to be pretty variable, just depending on the year, and you guys can thumb through all of this as you like.

I think some of the main takeaways in all of this though is that there seems to be the capacity for a significant amount of butterfish harvest that is -- That at least was not going through the federal seafood dealers, and it was probably going through the state dealers, and so, again, nothing wrong with that at all, and it's just pathways, but there are, in some cases, some substantial amounts of wenchman that are being landed.

If some of you have the opportunity to look through Captain Gerry's testimony that he had written out some information for you guys, when he was trawling for butterfish, he had said that, if the net filled up quickly, and he didn't have to trawl for very long, usually that was correlated with a large butterfish landing, and, if he had to trawl for a longer amount of time, usually he caught a bunch of these other species.

If we're looking at some of these records here, in cases where there is low butterfish landings, sometimes there are higher silver snapper, or wenchman, landings, or white trout, or, quote, mixed, and I guess that's assorted unidentified species, Andrew, and so there does seem to be a relationship between low butterfish landings and high landings of other species that he has listed. For what that's worth, that's that.

CHAIRMAN NANCE: Is this -- Let me ask you, and is this going to be shared with SSC members, or do we want to --

MR. BRYANT: I will get a confirmation, real quick, maybe before the meeting is over with, and I will let you know how that --

CHAIRMAN NANCE: Okay, because it would be interesting, just from a perspective to look at.

MR. BRYANT: That is something important, yes, and I agree, and I will find out.

CHAIRMAN NANCE: Okay. Thank you, sir. Okay. Tom.

DR. FRAZER: This is actually a question for Will, and, I mean, I appreciate that you aged some wenchman, and I was surprised at old some of those ages were, but, I mean, I have always assumed that the butterfish are only a couple of years old, right, two or three years old, and have you ever aged any of those in the Gulf, Will?

DR. PATTERSON: No, I've not aged any of the butterfish, and so I couldn't tell you how old they are, and, you know, I want to stress that we haven't actually validated our age estimates for the

wenchman, but, you know, I could show an image of what one otolith looks like, and they are pretty clear, but that hasn't -- That work hasn't been done yet, and so it's not a definitive age estimate, but I think it's -- Based on our work with other snappers and other deepwater reef fishes, their opaque zones are pretty distinctive.

DR. FRAZER: Thanks, Will.

CHAIRMAN NANCE: Any other comments or discussion on the first question?

MR. BRYANT: They said it's okay to share that data.

CHAIRMAN NANCE: Okay. Thank you.

MR. RINDONE: Just because Roy makes me nervous, can you send me a screenshot of that?

CHAIRMAN NANCE: Okay. That will at least -- At least we'll be able to get an idea, from our own minds, of association between butterfish and wenchman. Luke, please.

DR. FAIRBANKS: Thank you. I just have two quick questions. The first is these handwritten records, and what years does that include? I see it looks like it can be scrolled down, and I was just curious of being able to look at some of those totals, versus, you know, what we saw in the presentation, and my assumption is, based on the presentation, there are kind of few boats catching, or recording, this for a while, but it could be just interesting to look at that.

My other question was going back to a comment earlier, and I know, in the first presentation, it was mentioned that recreational catches are negligible, but I believe one of the fishermen, and I'm sorry, but I forget who, mentioned that, at least recently, it seems as if there's potentially more recreational catches, and certainly maybe some increasing interest in recreational catches, and do we kind of have a handle on a discrepancy of perspectives there? Should we kind of be taking that into account, as these sort of deeper recreational fisheries become more popular and accessible? Is that something that could start to be non-negligible and something we should think more about, or do we just not have enough data, regardless?

CHAIRMAN NANCE: Those are two very good questions, and it looks like that this data, and remember it's going to be from one vessel, and it looks like it starts around 1997, and I think it goes up to

2005, or 2007, it looks like, and so around there, those types of things, and so, anyway, just take this for what it is, and it just kind of gives us an idea from a single vessel and the catch of butterfish with the wenchman.

I don't know, and it's interesting, and this fishery -- I was talking with a gentleman in the back, and, I mean, I've known -- This fishery has been prosecuted since the 1970s, and I used to go out and do things with it, and so this -- While it's been there, I'm not sure about landings and who has collected landings for the fishery, whether it was the state or federal and those types of things, and I'm not sure about the number of boats that have been prosecuting it, and it looks like, in recent time, it's a couple. It's never been a large fishery, but it seems like it's been in existence for a while, for sure. As far as -- Yes, David.

DR. GRIFFITH: Thank you, Mr. Chairman. First of all, this is a year-round fishery, and it's not a seasonal fishery, right? When you pull up a lot of the wenchman with the butterfish, and then throw them back, are they dead, or are they still alive?

MR. GRIECO: Dead.

DR. GRIFFITH: They're dead? So, if they close the wenchman, then they have to close the butterfish?

CHAIRMAN NANCE: I think -- Roy and I were talking a little bit during lunch, and it seems, for this -- Butterfish is unmanaged. If you pull wenchman out, you allow those other three to be managed, and what do you do with wenchman, and it seems like, from a management standpoint, you cannot manage wenchman without managing butterfish, and they just are -- They seem to be caught together. If you had a limit on wenchman, would that preclude the capture of butterfish, those types of things? Roy.

DR. CRABTREE: I mean, it seems like most all of the wenchman take is occurring in the butterfish fishery, and that's not going to close, because it's not managed. Closing wenchman -- All that's going to do is result in the fish that would have been landed being thrown back dead, and so that's just not a viable option, and so I think it ought to come out of this complex, but I think the message to the council is, if you really want to manage wenchman, you probably have to do it in conjunction with looking at this butterfish and scad complex, and I don't know if butterfish -- If that fishery needs to be managed or it doesn't need to be, because I don't know enough, and I've never really looked at them, but I don't -- I think you could argue that either you need to do that or you can just as well take wenchman out of the management plan,

because you're not going to have any success.

CHAIRMAN NANCE: So let me ask this. From a standpoint of Question 1, take wenchman out of the management plan, do we have enough information to be able to recommend that? Do we have enough life history, and do we have enough of those other things that we could fairly comfortably take it out, or recommend that? Roy.

DR. CRABTREE: Well, I think -- I think there's enough here to justify taking it out of the complex. Just this initial look, I think there is an argument to be made for taking it out of the management plan, but then I think you have to think about the butterfish fishery, and the whole complex, and we haven't really looked at that enough, and so those are things, and there are a lot of criteria in the National Standard Guidelines with respect to what species ought to be in management plans and out of them, and I think the council would have to go through those.

We have taken species out of the management plan before, and I know one of the criteria has to do with can management of this species result in improvements or anything, and I think, in the case of wenchman, I'm not at all sure that management can be effective, in and of itself, because of the nature of the take, and so I think those are things the council ought to look at, but it clearly doesn't belong in a complex with queen, silk, and blackfin snapper. That's not appropriate.

CHAIRMAN NANCE: Luiz, please.

DR. BARBIERI: Just to follow-up to Roy's point, I agree completely, but I wonder, right, whether, at some point, it would be good for us to review how this complex was put together, and there had to be some criteria that was used. I mean, it sounds like that these species don't actually co-occur that often, right, and that they --

MR. RINDONE: It seems that three of them do, but not wenchman.

DR. BARBIERI: The wenchman is not occurring with the other three, and so I don't know these four ended up together in that way.

DR. CRABTREE: A lot of this happened when the ACL amendments were put together, and the council was under a deadline to implement ACLs in all fisheries, and so you had a lot going on, and a lot of decisions were made very quickly, and species like wenchman, I suspect, weren't really given much of a priority, and it may have just been put in there because it looks like it's a midwater snapper, and so I don't know how much thought, and I'm not sure

how much record you will really find explaining that.

MR. RINDONE: There also wasn't a lot of information available on wenchman back then anyway, and so -- We certainly didn't have the benefit of having fishermen that were interacting with the stock in a meaningful to be able to come in and talk about it. Certainly, based on Captain Murphy's records, if there were fishermen out there that were, we just -- Because it wasn't -- It wasn't red enough, and we weren't really focused on it.

DR. BARBIERI: Exactly, and I was thinking along the same lines that Roy was, that it doesn't look like that this belongs in the complex, but I wanted to make sure that we do our due diligence and we don't find some documentation, right, that would tell the criteria for why they were put together, and it looks like there isn't really any solid criteria for putting them together.

Wenchman is not an indicator species for this complex, right, and so I agree that the lack of information, really, is the main issue here, that we don't really know that much about the landings, about the abundance of the stock.

I mean, it would be Slide 16 and 18, right, in the presentation that have to do with the fishery-independent -- You know, to Josh Kilborn's previous point about is there some interest in the market that has developed and a little more targeting of this fishery, or has the abundance really increased, and it looks like the SEAMAP groundfish shows more of a stable -- You know, like what Shannon had said, without trends and highly variable, but then, when we look at the Slide 18, which is a miniscule proportion of the sampling, a very small proportion of positive catch, we see that spike that coincides with the high landings, and so it's just a lot of uncertainty about what's really going on.

CHAIRMAN NANCE: Slide 12 is also the small pelagic acoustics survey. It does a very similar thing to what we see in the trawl survey.

DR. CALAY: Except that the terminal year of that survey is 2013.

CHAIRMAN NANCE: Yes. Absolutely, and so we're cutting off that point. Anyway, it does cut off earlier than the others, for sure. Roy.

DR. CRABTREE: If the council decides to remove it from this snapper complex, but leaves it in the FMP, then it would be a stand-alone species, and they would have to come up with an ACL and an accountability measure, and I guess we would have to come

in and revisit the time series and go through that process of coming up with an ACL. How that would play out, I don't know, but it does seem, to me, that an alternative accountability measure that doesn't involve a closure would be appropriate, because I just see a closure as counterproductive.

CHAIRMAN NANCE: Shannon, please.

DR. CALAY: I do agree with the statement that Roy said earlier, which is that the evidence that has been presented so far suggests it's more appropriate to be managed in association with butterfish, which are not currently managed.

To be honest, we have the information available to prepare an OFL for wenchman alone. That doesn't change the fact that, when you exceed wenchman, you're going to have to come up with some measure, right, to stop catching wenchman, but wenchman are a bycatch of the butterfish fishery. I mean, I agree that it probably requires more thought, to determine whether it can be managed in association directly with butterfish.

CHAIRMAN NANCE: Thank you, Shannon. Harry.

MR. BLANCHET: In terms of how was the group put together, I believe, at the time when these groups were built, Dr. Froeschke was the person at the Gulf Council who was compiling the information and making the presentations to the SSC, and so his recollection of that might be a lot clearer than mine, because I've slept since then, but one of the goals, as I recall that exercise, was to not make so many groups that you were just chasing groups all over the place, and so there was an aggregation.

If you didn't have a good reason to separate something, it was more likely to be aggregated together, when you were talking about some of these smaller, relatively poorly-known species and species groups, and so I think that the general perception, at the time, was we're going to take these, and we're going to go with it, until we find some reason that we need to separate something out, but this is going to do it for the moment, but Dr. Froeschke could probably elucidate that more.

CHAIRMAN NANCE: Thank you, Harry. I'm not sure if John is available at the moment.

DR. FROESCHKE: I'm here.

CHAIRMAN NANCE: Okay. John.

DR. FROESCHKE: I'm just looking it up, and so, in the Generic AM Amendment, a lot of the groupings were based on -- I think it was a paper by Nick Farmer and Rich Malinowski, and it was a species grouping paper, and I'm looking for the reference right now, and that's pretty much where we based the information on. I can pull up the reference and send it to you all.

CHAIRMAN NANCE: It looks like Peter Hood is on. Let me interrupt you for one second, John, and see if Peter has any recollection. Peter.

MR. HOOD: John is right, and there was a paper done by Nick Farmer, and Rich Malinowski from our office was on it, and Mary McGovern from the College of Charleston and Peter Rubec from FWC, and I'm trying to find the reference in here, but, yes, it was a paper, and they did this species groupings, using this, as John said, a multivariate analyses, and it was sort of, to a certain extent -- I mean, it was a cluster analysis, and it was sort of focused on some of the rare species, ones that -- In terms of ways to manage them as a group, and we were sort of looking for that as a way to simplify how we structured our ACLs, and so that was the basis. Thanks.

CHAIRMAN NANCE: Thank you, Peter. John, anything else?

DR. FROESCHKE: I just sent the reference to meetings, in case you guys want to pull it up. I'm trying to pull up the document, and it looks like we have it on our website, and I can also send a link, in case you guys want to pull that up.

CHAIRMAN NANCE: I know Tom has that same reference, and I think Bernie --

DR. KILBORN: I emailed that paper to Ryan.

DR. FROESCHKE: If you look on page 14, it looks like there's some text relative to wenchman.

CHAIRMAN NANCE: Page 14, Bernie.

DR. FROESCHKE: It says the placement of it was challenging. That's not surprising.

CHAIRMAN NANCE: Okay. The placement of queen snapper, misty grouper, and wenchman was challenging. The three species occur at similar depths, but in different geographic areas. Wenchman only are reported off of Louisiana, and so we know that that has spread out since that time.

It looks like it was placed in this based on the percent cooccurrence and cluster analysis. The output appears reasonable to include queen snapper and misty grouper with the deepwater grouper and the tilefish complex, especially upon examination of depth. Wenchman occur in mid to deepwater and were often caught with yellowedge grouper, blueline tilefish, and queen snapper. Therefore, it seems reasonable to include them in the deepwater complex. There is the rationale that was used to put them together.

MR. RINDONE: It looks like it was -- The groupers were lumped together, and the tilefish were lumped together, and what was left were lumped together.

CHAIRMAN NANCE: Yes.

MR. RINDONE: So it should be the leftovers complex.

CHAIRMAN NANCE: So there's not a lot of reason, per se, that -- The lumping is because that was what was left over and not because they were highly associated with anything.

DR. BARBIERI: If I might --

CHAIRMAN NANCE: Absolutely, Luiz.

DR. BARBIERI: Mr. Chairman, that, to me, is a way for us to rationalize that there is no particular reason for them to stay together, if now we see changes in the fishery that warrant them being removed from this complex.

CHAIRMAN NANCE: Here is going to be my question. If we decide, and I'm not saying yes or no, but I'm saying, if we decide to recommend that they're pulled from the complex, what does that do for wenchman? Do we have to come up with -- For itself, do we have to come up with an OFL and ABC for it? Luiz, please.

DR. BARBIERI: That's what is in our scope of work, that, basically, if we remove it from this, and it continues being part of the management plan, of course, we're going to have to set the new ABC so a new ACL can be set up, and OFL as well.

CHAIRMAN NANCE: Ryan, to that point, please.

MR. RINDONE: Well, based on the conversations, it seems like there is another consideration, which is to manage it or to not manage it, because, like Dr. Crabtree mentioned, in order to properly

manage it, you probably need to bring in a few other species that are caught with it, and, based on the information that we have from Captain Murphy, clearly we've been missing a significant amount, and "significant" I think is comfortable to say here, but a significant amount of the landings that have been coming in perhaps through the state dealers that we simply don't have in front of us.

I think we've heard arguments in support of and against managing at all, and so that, perhaps, is a conversation that the council should have, and so I think that you guys probably do not have enough information in front of you to know enough about the landings, at this time, to recommend catch limits based on the burden of proof, if you will, that you have for other species, and it may also be that the intentions of the council, in terms of what to manage and what not to manage, may differ, and so perhaps it would be more prudent to get some input from the council before moving forward with setting a catch limit.

I think, if you guys wanted to recommend what to do with wenchman, with respect to its position in the midwater snapper complex, I think that would certainly be appropriate, and I'm looking over here at Dr. Frazer, and then, obviously, Dr. Nance will go to the council in August and talk about all of this with them and look for their input on what they think they want to do next, or what they want you guys to look at next.

CHAIRMAN NANCE: Luiz, to that point, please.

DR. BARBIERI: If I may, I mean, I'm under the impression that Dr. Crabtree is ready to make a motion to this effect.

CHAIRMAN NANCE: I think so. We'll hear from John, Trevor, and Will. John, please.

DR. FROESCHKE: My hand is a relic, and so I don't have anything.

CHAIRMAN NANCE: Thank you. Trevor, please.

MR. MONCRIEF: I am ready to entertain a motion for it, and so I will withhold my comment until then.

CHAIRMAN NANCE: Okay. Will.

DR. PATTERSON: Sorry, and I missed the early part of the discussion here, and Shannon's presentation, unfortunately, but I didn't see anything in the document that showed butterfish landings, or effort for butterfish, and was there any discussion

about what explains the uptick in wenchman landings in the Gulf of Mexico over the past few years?

CHAIRMAN NANCE: Ryan.

MR. RINDONE: Will, it could be that -- Because wenchman is federally managed, and so, in order to be able to land wenchman -- Captain Early has a reef fish permit, a commercial reef fish permit, which means, to land those wenchman, he has to land them with a federally-permitted seafood dealer, which would mean that all of that is then going to be recorded in the federal system that way.

The landings that we have from Captain Murphy's records pre-date the ACL/AM Amendment, and so the nature of how those landings came in, primarily through state dealers, could pre-date some of that requirement, and so that could be why. It's not that the data were not being collected by anyone, but it's that they were being collected in different places, for different reasons, and they have not been put together.

DR. PATTERSON: Okay. Thanks, Ryan. One person who might have some information about the distribution of these animals on the shelf, albeit in the Caribbean, is Kate Overly, who is a fisheries scientist at the Panama City Lab. She and Andy David have a project in the Caribbean where they drop static cameras down to fairly deep depths, and I think they go to about 500 or 600 meters, and they've been looking at the deepwater snapper fishery and its association with recently-mapped bathymetry in that region.

She pics up these various snappers on her rigs, and it wouldn't be Gulf of Mexico samples, or analysis, but it might give us some more insight into the vertical distribution and the depth distribution of wenchman and how it may differ from some of these other species in this complex.

CHAIRMAN NANCE: Do you have the feeling that wenchman are in that area, Will?

DR. PATTERSON: In the Caribbean? Yes, they're part of the fishery down there. They're a small component of the fishery, but they are captured in the deepwater snapper fishery in the U.S. Caribbean

CHAIRMAN NANCE: Okay. Thank you. Jim.

DR. TOLAN: Thank you, Mr. Chairman, and just a quick note. I put in a request for our folks in Austin, the commercial side, to inquire about any of these state dealers that may be taking in

these butterfish boats along the Texas coast, and so, as soon as I hear back from them, I will let you know.

CHAIRMAN NANCE: Thank you very much, Jim. Do we feel like we want to make any recommendations to the council, or do we need a little more information before we want to make these recommendations? I think the only thing we can do today is, in my opinion, is, if we want to recommend taking it out of the complex, but, other than that, I don't see where we can go. Trevor, please.

MR. MONCRIEF: I was just going to comment that when this -- When the closure first came up, we looked at all of our state landings, and we don't have any landings of wenchman on record, through the past in our state dealers, but then, if Roy is not ready to make a motion, I certainly am.

CHAIRMAN NANCE: Okay. Trevor, just out of curiosity, do you have any records in state landings for butterfish?

MR. MONCRIEF: I'm sure we do. I haven't gotten our -- We have had butterfish boats in the past, and so I'm not sure if the fishery operated within our trip ticket time, but I can certainly check.

MR. RINDONE: Trevor, can you also look for silver snapper?

MR. MONCRIEF: Silver snapper?

MR. RINDONE: Yes, sir.

MR. MONCRIEF: Yes.

MR. RINDONE: Since it seems that was one of the ways that it was recorded anyway.

MR. MONCRIEF: Is that a local name, or is there a --

MR. BRYANT: Golden thread.

MR. RINDONE: Golden thread, and so silver snapper or golden thread, either one of those. See if either one of those show in the state records.

MR. MONCRIEF: Okay. I will do that.

MR. RINDONE: Thank you.

CHAIRMAN NANCE: Trevor, did you want to go ahead and make your

motion, or do you want to wait for a minute?

MR. MONCRIEF: No, I'm happy to make it. **I mean, I think the motion would be that, based on review of catches and historical records, the SSC recommends wenchman snapper be removed from the midwater snapper complex.** I am friendly to any amendments or changes or anything else that would need to be more explicit, but I think that's kind of the first step here.

CHAIRMAN NANCE: Okay. We have a motion from Trevor. Do we have a second? John seconds. Is there discussion, please? Personally, from my perspective, I feel very comfortable with this motion removing wenchman from the midwater snapper complex. I think, from the -- It may overlap some, but I think these seem to be more oriented towards northern Gulf of Mexico, and the other ones seem to be more southern Gulf of Mexico, and there is certainly overlap between wenchman being south and some of other snapper being north. We're always going to have that, but, as far as removing it from the complex, I am comfortable with that motion. Roy.

DR. CRABTREE: I am comfortable with that, and I think we ought to recommend to the council that they review, or reconsider, the management of wenchman, given the context of how it fits into the butterfish fishery, and they ought to think about how exactly to handle that, and then, depending on what they then decide to do, we can come back in and evaluate how we might set up ACLs for it.

CHAIRMAN NANCE: Do we need that as part of this motion or just -- I don't think so, but -- Okay. Doug Gregory, please.

MR. GREGORY: Thank you. I support the motion, and I have a question, I guess for Ryan or somebody from the Regional Office. This is going to require a plan amendment, as far as I understand, and so how long might we be stuck with the current regulations? How long might the fishery be stuck with the current regulations, until something else can supplement it, or supplant it? Are we talking two years, or are we talking five years?

CHAIRMAN NANCE: Ryan, I guess to that point.

MR. RINDONE: It depends on the speed with which the council responds to this motion and with whatever it wants to do next. If it is able to justify that wenchman do not require federal management, that management by the states, in cooperation say with the Gulf States Marine Fisheries Commission, is sufficient enough to ensure the health of the stock, then that would be one thing, or, if it's determined that federal management is necessary, it seems like other species would have to be considered, to be managed

concurrently with wenchman, like butterfish and scup and a couple others, or scad and a couple others, that are all caught with relative frequency together, and so it's either not an issue, or it's not just a wenchman issue.

CHAIRMAN NANCE: Thank you, Ryan. Trevor.

MR. MONCRIEF: Just a procedural question for the motion. Would this -- So the motion, as I intended it, would remove wenchman and remove the need for an OFL and ABC for the species, and is that the procedure that's going to occur, once this adopted, or does it just have to be reviewed?

CHAIRMAN NANCE: No, and this one is simply we're recommending to the council that wenchman would be removed from the midwater snapper complex. If the council then decided that, yes, they would follow that recommendation, we would have to come up with OFL and ABC and those types of things for the midwater snapper complex, which is going to be left now with three species, and we would have to come up with new recommendations for that and then figure out what to do with wenchman, with it being alone, whether we can manage it alone or whether we have to manage it with a butterfish complex or something else, and so that would have to be decided down the road.

MR. MONCRIEF: So, with that response, would it be useful to add in additional context, as far as the thought process of how it should be looked at in the future, to try to give a little bit of direction, or do you just want to try to convey that in the council meeting?

CHAIRMAN NANCE: Personally -- This is my personal -- I think that this motion does what we intended for it to do, and I think I can give background to the council of why we were choosing this and then recommend some alternative approaches that they may want to come back and talk to us about.

MR. MONCRIEF: Sounds good to me.

CHAIRMAN NANCE: Okay. Josh.

DR. KILBORN: Thank you, and you more or less answered my question, but I'm still a little curious that -- If we're not explicit about the idea that wenchman need to be managed in conjunction with at least butterfish, which it sort of seems like they do, then, if there's no appetite for managing butterfish -- If we remove this species from its current complex, then it could potentially fall into the realm of not being managed in any way, and is that correct?

CHAIRMAN NANCE: If it -- You would have to take it out of the FMP for that to occur, Josh.

DR. KILBORN: Okay.

CHAIRMAN NANCE: It's still part of the Reef Fish FMP, and so it's in there, and, once it's in there, it needs to be managed, or, if the council decided to remove it from the FMP, then it wouldn't require federal management. Roy, to that point.

DR. KILBORN: But that still -- If we can't manage it without managing butterfish, then this is very closely tied to that topic, right, and so is there a particular reason why we don't manage butterfish?

CHAIRMAN NANCE: It's been a fishery, but no one, I guess, federal or state, have not managed it, not in the Gulf. Roy, to that point, and I know Roy may be able to give us more insight.

DR. CRABTREE: I don't know why we've never -- I don't recall ever having a conversation even about managing butterfish. The only other category of species is the ecosystem component grouping, which generally do not have to have a lot of these criteria and ACLs and things, and that -- You put something in more to gather information and determine things about it, but I guess that might be something you could discuss with the Regional Office folks.

CHAIRMAN NANCE: Okay. Jim.

DR. TOLAN: Thank you, Mr. Chairman. I've got those numbers in for the Texas landings, and we can put them up real quick, but it really pales in comparison to what we've been talking about so far, and it's really, really small numbers, and it's all centered around the upper half of the Texas coast, and it mostly comes into Sabine, but you can see here it's not nearly the poundage we're talking about -- These are just in pounds, and so, one more graph down, it does it by region, and so it's, again, centered around the upper Texas coast, even though that fishery, as we've seen in the graphs from the groundfish survey, is all the way down to the Texas-Mexico border. There is really no boats once you get past Aransas that are bringing in any butterfish.

CHAIRMAN NANCE: Jim, just out of curiosity, when it says, "live weight", does that infer the fish is alive?

DR. TOLAN: No. That's just the way it's reported.

CHAIRMAN NANCE: Okay. Thank you. It looks like there is just a few landed. Okay. Thank you so much, Jim, for that. Doug.

MR. GREGORY: I suspect the reason that butterfish has not been addressed is due to confidentiality of the data, and I know, in the early, early years of the council, they tried to do a groundfish FMP, and they ran into that problem. Too much of the data was confidential, and so they really couldn't do an FMP.

CHAIRMAN NANCE: I remember the groundfish plan, yes. Leann.

MS. LEANN BOSARGE: Good afternoon. How are you doing, Mr. Chairman? Thanks for giving me the opportunity to speak. I was wondering -- I had a question about page 11, Slide 11, in Dr. Cass-Calay's presentation, and so I was trying to understand the red dots, and could I ask about that?

DR. CALAY: Yes, of course, and hello, Leann. How are you?

MS. BOSARGE: I'm good, and you all are almost done with me, but not quite yet.

DR. CALAY: It's always good to hear from you.

MS. BOSARGE: Yes, that's right. That's right, and I'm in the short hairs now, and so the biggest red dot -- It says, in that legend, it says number per trawl hour, and it says 3,000 to 7,500, and so am I interpreting this correct that that's wenchman, and somewhere between 3,000 and 7,500 wenchman per hour in the net that were seen on that survey, for a red dot of that size?

DR. CALAY: This is from an acoustic survey, and what I can say definitively is that the size of the red dot is an indicator of the relative abundance in that sampling unit, and so it's very difficult to read this from a distance, and this presentation has some faulty animations in it.

I am going to have to review the actual working document that was prepared for SEDAR to interpret the unit of effort here, and I was more intending to show you that the largest catches from that survey occur in the northern Gulf and in the western Gulf, as opposed to the eastern.

MS. BOSARGE: Yes, and so we can see that the range of that particular species is -- It kind of goes along with the written testimony from Captain Murphy that it probably does go from at least, at a barebones minimum, the northern Gulf, all the way across to the western Gulf, and probably down into Mexico, and so

it's fairly widespread.

If those dots are anywhere close to accurate on the number of fish per trawl hour, there are a bunch of them out there, and so I just kind of wanted to put it back into perspective, what we're talking about here.

The quota on those fish is 166,000 pounds, I believe, and it's been that for many, many years, and so, if we're looking at 3,000 to 7,000 fish per hour on those fishery-independent tows, there is a bunch of those fish out there, and I just -- Sometimes I think we get caught up in the weeds, and it's good to step back and realize that we're talking about a gnat on an elephant here of what we may actually be looking at removing, and, even if you all pulled it out of the complex, and I thought Dr. Cass-Calay said she had some numbers to give you all for potential OFLs and ABCs for wenchman, based on a Tier 3a rating, and that it would still -- Even if you doubled the quota, it would probably still be a gnat on an elephant, and so just to step back and kind of put it in perspective for a second. Thanks for letting me talk, Mr. Chairman.

CHAIRMAN NANCE: Thank you, Leann. Harry.

MR. BLANCHET: Thank you. This will be quick, but it's hard, with these dot plots like this, to really see what's going on, but the thing that struck me about this is it looks like -- Looking at this one that's on the screen right now, it seems like every trawl, at the edge of the survey, was catching wenchman, and, as you get further inland, it becomes less common, but, essentially, I mean, try to reconstruct what the dots were, where all of those little semicircles and ovals are on the outside, and it seems like everything at the bottom is catching wenchman.

That may be a very, very common species out there, but, unfortunately, without having a better handle on just how many stations there are, and how many positive stations there are, it's not really easy to say that, but it does look like, in those deepest trawls, they really are pretty common.

CHAIRMAN NANCE: Yes. Thank you. Will.

DR. PATTERSON: Thanks, Mr. Chair. I think Councilwoman Bosarge raises a really important thought here, idea here, about the trawl catches, and it would be useful, I think, to go year-by-year and add up the number of fish that are captured, or have been captured, were captured, in this survey, as well as the SEAMAP surveys, having spent some time on the SEAMAP ships, collecting reef fish

in trawls, my recollection, and it's been a little while, is that mostly these are 100 to 150-millimeter fish that are caught, at least in the traditional SEAMAP trawl survey, and I know the small pelagics survey doesn't go on any more, but it could give a sense of what the historical removals were, just from the fishery-independent perspective.

Then to balance to those against what the estimated removals were from the fishery, and that may give us a sense of the capacity of the stock, at least in a relative sense, and I think that would be a useful exercise.

Secondly, I think it would be useful to look at the size composition of the catch of wenchman by depth, both in the small pelagics trawl survey that no longer goes on as well as putting that together with the SEAMAP trawl data, and see if there is in fact this ontogenetic shift to smaller fish caught in shallower water and deeper waters producing larger fish.

CHAIRMAN NANCE: Thank you, Will. Trevor, please.

MR. MONCRIEF: Ms. Bosarge kind of -- That's kind of the thought process that I had in my earlier comments, but relatively uniform distribution across the entire shelf and the magnitude of this fishery, and then the thought process about going and then moving into an OFL and ABC for this species, based on landings, and, I mean, this issue occurred, or came onto our radar, simply because that midwater snapper group closed.

If we scale things based on landings, I mean, that one year was an exponential increase, and I just -- I foresee that, if there is a market for this species, that, whatever data we have on hand to make that thought, which is landings, that I feel like we would just be revisiting this issue pretty quickly.

I guess the route that Will was talking about and everything else, kind of gathering more information on the species, to really figure out what its distribution is and what the catch is like, and, really, how many removals might be occurring, is a great start, and I just see us -- With the magnitude of the distribution and the potential for more boats to be in, and recall that these landings are confidential simply because of the rule of three.

That was enough to close the fishery, and so just think about it. If you double the amount of boats that start participating, I think we'll be revisiting this pretty quickly, and so just that thought process is kind of what's going through my head right now.

CHAIRMAN NANCE: Trevor, thank you. Josh.

DR. KILBORN: Thank you. I think I just want to maybe push back a little bit on the concept, or the idea, that this is a gnat on an elephant, or whatever the phrase was, just because we don't know for sure, right, and, if we're relying on these maps specifically to make that determination, then I think we might be misleading ourselves, because each one of these dots is exactly that, right, a fishing point, and the small pelagic acoustic survey -- Those numbers, if I am correct, are all small pelagic species and not wenchman, in this particular image.

Then, on the maps on pages 14 and 15, those are the trawl surveys, and, again, those bubbles are huge, and there is a lot of overlap there, and it may appear that there is a very broad distribution of these individual animals, but that may be just an artifact of the visualization process, on top of the fact that this is twenty years of data, and the next slide is, what, ten years or so, or eleven years of data, twelve years of data, and so, again, I think we just need to be a little more cautious, and I do think that we need to follow-up on collecting a lot more information about this particular species. Thank you.

CHAIRMAN NANCE: It's always -- In these cases, these bubble plots can really change with just your eye, and it's nice to see the data behind it. Shannon, to that point?

DR. CALAY: I am reading the SEDAR 49 paper that describes the small pelagic survey, and it's described as a trawl survey, and it discusses the number of wenchman found in the trawl survey, and it talks about the number of wenchman per year, and so I think that -- I don't know why, and I'm trying to figure out if there is an acoustic component to this survey, but it appears to be that the small pelagic survey is conducted using a trawl.

CHAIRMAN NANCE: It's a midwater trawl, and I can't remember the acoustic part of it, unless it was the midwater trawl to be able to collect the species that were associated with that acoustic signal. I am trying to remember that survey, but it's different than the bottom trawl.

DR. CALAY: Yes, and so this does appear to be specific to wenchman, in this case, and we also, in this document, which can be provided to the SSC -- It has annual plots of the distribution of the survey, as well as the relative abundance per station, and, visually eyeballing it, Ryan and I see no trends from that, but that data can be provided to the SSC.

CHAIRMAN NANCE: Thank you. Luiz had a comment, and I'm going to go back to the motion, and we can take up that motion.

DR. BARBIERI: Right, and, actually, that was one of my points as well, and I think that we've heard a lot of very good commentary here, very good input and discussion about the distribution and the abundance and the depth range and the densities of wenchman, right, and potential additional data the Center might have that we would be able to look into in more detail, to make a better call here, but I don't think that these discussions invalidate that motion that was put on the table.

To me, this breaks it down into two components, and this first motion is really looking into removing wenchman from this complex, and then, based on this recent discussion, perhaps we choose to request additional data, additional analysis, to potentially consider how we would set management advice for wenchman.

CHAIRMAN NANCE: Thank you. Let's go ahead and take care of this motion. **The motion states: Based on review of catches and historical records, the SSC recommends wenchman snapper be removed from the midwater snapper complex. Is there any opposition to this motion?**

DR. KILBORN: Can I make a -- Can I ask a question, to clarify?

CHAIRMAN NANCE: Yes, you certainly may.

DR. KILBORN: Are we going to add that language that Luiz just talked about to this motion, or will that be a second motion that follows onto this?

CHAIRMAN NANCE: I would like to have that as a second motion, if that's okay, Josh.

DR. KILBORN: Thank you.

CHAIRMAN NANCE: You're welcome. **Any opposition to this motion? Hearing none, the motion is carried without opposition.** Do we have a second motion then? Luke.

DR. FAIRBANKS: Sorry, and I didn't get in there before the motion carried, and I was just going to comment that, if we wanted to put the word "available" before "historical records", just because, you know, looking at, for instance, the handwritten data -- My assumption is there's probably other records out there that we just don't have available to us, and I don't -- The way that this is worded, it kind of gives the impression that we had some sort

of comprehensive, you know, set of records at our disposal. I don't think it's a big deal if it's not in there, but that's all I was going to add.

CHAIRMAN NANCE: Thank you, and I think, Luke, that's a great point, and, when I talk about this motion at the council meeting, I will make sure that they understand that the records that we have are very spotty, and we based it on these things, as well as other input that we had, as far as life history and -- Well, as far as where these species occur and things like that, and so, anyway, but that's a good point. Do we have anyone that wants to make a motion based on Luiz's comments? Luiz.

DR. BARBIERI: Mr. Chairman, and I don't know, Josh, if you have something that you're drafting there that you can put on the table, but we had discussed that these points, all these points, are going to be brought up in our summary report, right, and not necessarily be as a motion. Josh, I'm not against a motion to this effect, if you want to be crystal clear to the council that this is going to be the next step, but it's not something that I was considering making, because I think it's probably understood that -- If the council asks what will be the next step, that that will be the most logical step.

CHAIRMAN NANCE: There is two ways to handle this. There is having a motion, which is a little more explicit what we're thinking about, so the council understands that, or trusting what I will give as background to what we see as next steps of where we think we need to go, and we don't necessarily have to have a motion for that, but I will leave that up to the SSC, if someone would like to make a motion, and we can certainly do that.

DR. KILBORN: I didn't necessarily have a motion in mind. I just am a little bit ignorant of the process, frankly, and I just wanted to make sure that we weren't opening ourselves up to some sort of weird legal loophole, where now this species is not being managed in any way, and so that was my main concern.

CHAIRMAN NANCE: Josh, I appreciate that, and we don't want to have that happen, and so if there's -- I will leave it open for a moment. Ryan.

MR. RINDONE: I was just going to say -- I mean, if it seems that a lot of these landings were coming in through the states, it might be useful to ask Gulf States to work with the -- Gulf States Marine Fisheries Commission to work with the five Gulf states to have some kind of an examination of what the landings generally have been, over time, from this midwater trawl fishery, because clearly

it encompasses a lot of different species, and maybe use that first to build a record to see if there is a problem, and are landings consistent through time, and, if they are consistent through time, then maybe there's not a problem.

If there are changes that need to be explained, perhaps the fishermen can help explain that, because certainly we're limited in the empirical data that we have available to us about the species life history and its distribution, and we're limited to what we've seen through other surveys, and so it might be useful to start asking some of those initial questions first, before we get too far down any particular rabbit hole.

You could make a motion to that effect, something like, you know, just recommend that the council ask Gulf States Marine Fisheries Commission to work with the five Gulf states to review the landings of key midwater trawl fisheries and present that to the SSC at a future date, but Luiz is making that motion. I am just the parrot. I sound just like him sometimes, or he like me, and so Luiz's motion is to --

DR. BARBIERI: Yes, I was going to make a motion to recommend the council ask the Gulf States Marine Fisheries Commission to work with the five Gulf states to evaluate historical landings for --

MR. RINDONE: (Mr. Rindone's comment is not audible on the recording.)

DR. BARBIERI: Scad and any other associated species in the landings, or associated species from midwater trawls.

MR. RINDONE: Yes, from the midwater trawl fishery, because I think, ultimately, no matter what the council wants to do, there's going to have to be some examination of this, right, and so they're going to have to look at something.

DR. BARBIERI: My understanding of John's addition to this motion is that he is volunteering to second the motion.

CHAIRMAN NANCE: Okay. Seconded by John. Is there discussion on this motion? Leann.

MS. BOSARGE: No, sir. When your motion is done, please.

MR. RINDONE: I have something, Mr. Chair.

CHAIRMAN NANCE: I'm sorry, Leann?

MS. BOSARGE: I said I will wait until after your motion is finished, and it's not relevant to that motion.

CHAIRMAN NANCE: Okay. Thank you. Doug.

MR. GREGORY: Thank you. I would be more comfortable if this only mentioned wenchman, which is under our purview.

MR. RINDONE: I mean, that's a fair point, because wenchman is the only one for which the council is directly responsible. Ultimately, if the council is going to continue to manage wenchman, this would obviously help with its ability to set, or for you guys to set, a revised catch limit. If it's not going to manage it anymore, then that's what it's going to have to justify. It's going to have to justify why, as far as removing it from the FMP.

I guess, to that effect, Mr. Atran has been sending a couple of emails into us and said to us that the council had initially considered developing an FMP for butterfish, but ultimately didn't proceed with it, because it didn't think that it was going to become something that was going to require federal management. It seems to have been fished consistently, at least by a few boats, since the mid-1990s, and so -- Well, as Dr. Nance said, as long as he could recall, there's been some kind of a fishery for it.

Clearly, our landings records are sparse and distributed, and so the first thing to do, for wenchman anyway, would be to figure out what's there, and so, I mean, wenchman is really the key thing that the council has to know about to do something with wenchman, and so --

CHAIRMAN NANCE: I would feel, from my perspective, comfortable, and, Doug, I know exactly what you're alluding, but I think, with this motion, it gives me the opportunity to discuss with the council other species associated with it that, if we're going to move forward with wenchman, that we would need to know some other things, in order to do those things. John.

MR. MARESKA: Also, in response to Doug's comment, we've seen some information that the other species aren't involved in this midwater fishery, and that would also help validate that, and then, if we have to move forward -- If the council decides to manage butterfish and wenchman together, we're not asking for an additional request.

CHAIRMAN NANCE: Thank you. Will, please.

DR. PATTERSON: Thank you, Mr. Chair. I'm a little confused what we mean by "evaluate historical landings". Are we asking them to

compile all the historical landings? Maybe some clarification there, please.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: We can put "to compile" instead of -- Of course, if they compile, we will evaluate.

CHAIRMAN NANCE: Do you want to change that "to compile"?

DR. BARBIERI: To compile historical landings for butterfish, wenchman, scad, and any other associated species for the Gulf SSC evaluation.

CHAIRMAN NANCE: Okay. John, are you okay with that? Thank you. Jim.

DR. TOLAN: Thank you, Mr. Chairman. John covered the point that I was going to bring, in that, if butterfish and wenchman are so tied together in the midwater trawl, it really needs to stay in there, from a contextual going through the time series point of view. Thank you.

CHAIRMAN NANCE: Okay. Thank you. Any other discussion on this motion? Let me go ahead and read the motion. **The motion is to recommend the council ask the Gulf States Marine Fisheries Commission to work with the five Gulf states to compile historical landings for butterfish, wenchman, scad, and any other associated species from the midwater trawl fishery for the Gulf SSC evaluation. Any opposition to this motion? Hearing none, the motion passes without opposition.** Leann, one final comment, young lady.

MS. BOSARGE: Thank you. This is a question for Dr. Cass-Calay. I thought I heard her say that she had a spreadsheet that could be used for potential OFLs and ABCs for this complex, or maybe it's just for wenchman, and I'm not sure, but just to put this in context again for you all, and so this is an issue for commercial fishermen right now.

They came to the council, back in 2021, and it took until the middle of 2022 to get it on an SSC agenda. It is an issue for them, and there is not very many of them, I will grant you, that are targeting this, but, if you do have some potential OFLs and ABCs that might possibly be higher, and you don't feel that there would be a huge risk of overfishing this population with those increases, if you all could look at those, and that's something the council can actually implement in a fairly short period of

time.

I appreciate all the discussion involving do we add something else to the management plan, like butterfish, or do we simply take wenchman out of the fishery management plan, but I think those are longer-term solutions, and, right now, the fishermen need something for the short-term, to get them through until that, and so, Dr. Cass-Calay, do you have those kind of numbers today?

CHAIRMAN NANCE: Shannon.

DR. CALAY: I have all of the wenchman landings from 1986 until 2021, and, if the SSC wanted to determine the reference years and the tier, we could calculate OFL and ABC for wenchman. I also have the original spreadsheets that were used to do the OFL and ABC for the midwater snapper complex, and we can recalculate the midwater snapper OFL and ABC without wenchman, using the same criteria that the SSC used in 2010, and so those are all available should the SSC choose to reevaluate those.

CHAIRMAN NANCE: The landings data are from where?

DR. CALAY: The wenchman landings data are primarily U.S. commercial -- Well, they're commercial landings from the ACL monitoring files. The midwater snapper landings are from the Generic ACL Amendment, and they are what was reported at that time. I also have some updated landings from 2012 forward, but we have not determined what data within those estimates might be confidential for the other members of the midwater snapper complex.

So, essentially, I think the choices that I am prepared to support are you can look at the wenchman landings, and we have agreement that we can share those, and we could determine, if there was a need to, a new OFL and ABC for wenchman. Then we could also recalculate the mid-water snapper OFL and ABC using the previous decision made by this SSC and just remove wenchman from it, and it would just be a complex of three members, and so the OFL and ABC would apply to blackfin snapper, queen, and silk.

CHAIRMAN NANCE: Okay. We have heard some alternatives here. Any recommendations from the SSC on how to proceed? We can either stop now, and we have two recommendations that we're going to send to the council, and we're trying to get some more landings data, which I think are probably out there, or do we go with the landings data that we have that Shannon wants to show us, or has for us, and make recommendations for wenchman OFL and ABC and for the other three in the midwater trawl complex? Trevor.

MR. MONCRIEF: Is there any way that we can pull that slide up of Shannon's, just to look at the potential options? I am certainly partial to Ms. Bosarge's argument here, and, I mean, it has been a while, and, you know, the thought process of kind of what Roy was saying.

When you stop -- When you don't allow them to keep wenchman, they're just going over the side, and it seems like, if we can just come up with something to do two things at once, one to figure out the fishery a little bit better and understand the landings, and, at the same time, try to, you know, get a little bit of flexibility, so this doesn't occur again, and it's not coming across and affecting the fishermen in another year, and I think that would be a good path forward for us.

CHAIRMAN NANCE: Okay. Thank you, Trevor. John.

MR. MARESKA: So, based on the information that Will presented about the age structure, I think we should proceed with caution, because I would be very concerned about the sustainability, the long-term sustainability, if this fish grows as slow and lives as long as Will is indicating. I don't see where this would be a sustainable long-term fishery, and so I'm kind of just suggesting we proceed cautiously.

CHAIRMAN NANCE: John, thank you. Shannon, would you be able to put those -- Does Bernie have those?

DR. CALAY: I sent you a spreadsheet.

CHAIRMAN NANCE: Then we would be able to look at that, but, John, your point is well taken, and I think, from what I heard from Will also, it's that, if that is a trend, we need to be able to know that and proceed with caution. Okay, and so that -- Shannon, would you go ahead and explain that, please?

DR. CALAY: All right. I do actually have all of the landings from 1986 through 2021 in my version of this spreadsheet, but Ryan and I made an executive decision that, because those landings in those initial years were so small, that they could in fact be confidential landings, and so we deleted them from the public version that you're looking at here, but the landings that were used for the OFL calculation in 2010 were the landings from 1999 through 2008.

If you scroll up a tiny bit, that first set of columns here that I am indicating show the calculations that are consistent with the -- If you were to just use the same decisions, reference years, of

1999 through 2008, these are all -- The mean is 54,000 pounds, and the standard deviation is 22,800 pounds, and these are your options for OFL and ABC from your tiered control rule, 3a and 3b.

I put together a few different options, just to explore it myself, but what I want to kind of point out, and I will just kind of plot these landings for you, quickly, is -- Remember they look like this, and so the period that you used for the previous OFL calculation was 1999 through 2008, and, actually, after 2008, there was a long period where the landings generally declined, and then we see this large increase in the most recent years.

I think 2019 is such a small number, and it's 1,000 pounds, that it's probably debatable whether that's underreporting or inaccurate in some matter, and so, essentially, you could select the same period of reference years and just calculate OFL and ABC for wenchman specifically, or you could select a different period of reference years.

CHAIRMAN NANCE: Those are those three options there, and you've got one that is what we did before, the years we did before, and then all the years, and then all the years except for 1999.

DR. CALAY: Yes, and these aren't really -- These aren't intended to be the only options, but this was just an exploration that I was doing myself.

CHAIRMAN NANCE: There's a whole bunch of combinations. Luiz, please.

DR. BARBIERI: Shannon, then a quick question. One is do we have an ACL now in place for wenchman alone, or just for the complex?

DR. CALAY: Just for the complex.

DR. BARBIERI: Just for the complex, right, and so switching from what we have, from the complex -- I mean, that just seems, to me, that it would be a bit more complicated for us to look into this, and then, looking at the -- What's the current OFL and the current ABC, so we can compare that with those landings, where they would sit?

DR. CALAY: So it's on a different spreadsheet, which is not shown on this screen. It's roughly 209,000 pounds is the OFL for the complex, and it's just the sum of the complex members. It's the mean of the sum over 1999 through 2008.

DR. BARBIERI: Right, and the ABC would be --

DR. KILBORN: Could someone reiterate, for those of us online?

CHAIRMAN NANCE: I'm sorry?

DR. BARBIERI: She's just looking at the values now.

CHAIRMAN NANCE: She's looking at them, and so soon as she -- She will tell you when she has them.

DR. CALAY: I am back.

CHAIRMAN NANCE: She went to get her computer, so she could look at them.

DR. CALAY: All right, and so, for the midwater snapper complex, including wenchman, the OFL is the mean plus two standard deviations, and it is 209,000 pounds.

CHAIRMAN NANCE: So, essentially, the complex is 209,000, and wenchman alone, using that same period, is 99,669.

DR. CALAY: That's correct, using the same reference years.

CHAIRMAN NANCE: Yes. So it's -- Depending on your reference years, and, if you use the same reference years as was used for the initial amendment, it would be 99,669 for the OFL, and 88,255 for the ABC.

DR. CALAY: Well, that is an option available to you, but I believe that the default is plus one standard deviation.

CHAIRMAN NANCE: Okay, and so that's the one below it, the 76,840?

DR. CALAY: Yes.

CHAIRMAN NANCE: Okay. Then, if we use the reference years 1999 through 2001, the OFL for wenchman would be 116,856, with an ABC of 81,477. If we excluded 2019, OFL would be 117,752, and an ABC of 82,941.

DR. CALAY: Correct.

CHAIRMAN NANCE: So those are -- We could certainly recommend one of those as our OFL and ABC for wenchman. Luiz.

DR. BARBIERI: I don't mean to overcomplicate this and throw too much process, right, because we're trying to get to some practical

solution here, but, I mean, definitely looking at data from 2019, or 2018, onwards, right, doesn't really give us a stable time, and so, usually, our criteria for setting, using landings, is to have about ten years of stable landings, and this is the most variable time for landings that we have along the entire time series. It's just difficult to use those -- You know, this time period to set an OFL and ABC, I would say.

CHAIRMAN NANCE: Any other SSC member comments on this approach?

DR. KILBORN: How does this compare to the current recommendations for this stock?

CHAIRMAN NANCE: Josh, is that you?

DR. KILBORN: Yes.

CHAIRMAN NANCE: Like I said, it was the --

DR. KILBORN: Is it closed? I'm not sure I understand the nature of the problem that we're trying to solve, frankly.

CHAIRMAN NANCE: The problem is I think the catch of wenchman alone is approaching closing the entire midwater snapper complex, and so the midwater snapper complex has an ABC of -- I'm going to guess here, and is it double?

DR. CALAY: The ABC?

CHAIRMAN NANCE: Yes. It's probably 114,000?

DR. CALAY: The entire complex has an ABC of 168,000 pounds.

CHAIRMAN NANCE: So, right now, it's 168,000 pounds, and that is the ABC for the complex, and wenchman itself is approaching that value, the last couple of years, and so it has -- That one species has the issue -- Well, you have an issue with that whole complex, because of one species, and so it's going to close the whole complex, and so the other snapper, that other fishermen are going after, would not be able to be prosecuted, because the complex is closed because of wenchman. Does that --

DR. KILBORN: Yes. Thank you.

CHAIRMAN NANCE: You're welcome, Josh. John, to that point?

MR. MARESKA: Josh, also, the butterfish fishery is not going to close, and so they're going to continue to fish, and the wenchman

that are caught are just going to be discards that we'll have no record of, and so that's the other part of the issue.

CHAIRMAN NANCE: Yes. Thank you.

DR. KILBORN: Very good. Thank you.

MR. MONCRIEF: A follow-up, Mr. Chair?

CHAIRMAN NANCE: Yes, and who is that?

MR. MONCRIEF: Trevor.

CHAIRMAN NANCE: Trevor. Yes, please, Trevor. I can't see the hands, and so Trevor, please.

MR. MONCRIEF: It's all good. I do -- I understand the thought of the precautionary approach, and trust me that I'm not trying to push for anything that is not precautionary, but I think -- I mean, the statement was made that we can't really look at the current time series and compare it to the past time series, and that's accurate, right?

It's hard to say that 2010 is identical to what was going on in the recent past, but, you know, I say all of that to say that I think a reasonable precautionary approach is to at least have something set at current fishery operations, or at least as close to them as possible, that we've seen in the last couple of years, just to be able to at least keep the fishery open while we continue to evaluate it, and I don't think that's throwing precaution to the wind.

I think that just sees it as, you know, we want this fishery to continue, and you don't want to put in a closure that would have those fish just be discarded dead, and that would be foregone yield, and I feel like we can find some reasonable path forward here that would keep current operations ongoing while we sort out more of the information that we have, and so that's kind of where I'm at on this.

CHAIRMAN NANCE: Thank you, Trevor. Doug, please.

MR. GREGORY: Yes. Thank you. I agree with Luiz that our approach, in the beginning, was to look for stable landings over a ten-year period, and I can only suspect that, looking at wenchman, we probably thought that one high year was an anomaly, and all the other snappers in this complex had low-level landings that were stable.

The other point I will make is this approach will not work, using means and standard deviations, unless there is a stable fishery. If we have an expanding fishery, like we may have, it won't -- This approach won't work at all, because the mean assumes that you're going to catch the average landings, and, if you go one standard deviation above that, you close because you reached an ABC that -- But there's a 16 percent random chance that you would go above one standard deviation fishing the mean, on average.

Even if you had a stable fishery, and you implemented a one-standard-deviation ABC, there's a 16 percent chance, every year, just due to random variability, that that fishery will close, and so, given that this is not a stable fishery, as far as the landings trajectory goes, this whole mean and standard deviation just won't work, plus, as you pointed out, if we do use these numbers in this fashion, we're going to be reducing the current ABC by half or more, which exacerbates the problem and doesn't resolve it, and so I don't think we're ready, and I'm sorry, Ms. Bosarge, but, at this point, I don't think we're ready to try to establish ABCs for this fishery. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Will, please.

DR. PATTERSON: Thank you, Mr. Chair. I agree with Luiz's comments earlier about this methodology, this approach. Typically, it's utilized with a time period of relatively invariable catch over time, or landings over time, and, even then, it's a really poor way to estimate OFL and set ABC, and we struggled with that quite a bit when we worked through this, years ago, after ACLs -- The timeline for having them in place occurred, and we had to -- We were asked, by the council, to provide scientific advice about these.

In this case, we actually have fishery-independent surveys that show an uptick in CPUE in the recent years, and that's about on the same scale, or magnitude, or scale is more appropriate, of the increase in wenchman landings. Now, wenchman apparently are a bycatch species in the butterfish fishery, but they have value, and they're sold, and, even though the fishery is not regulated, we have fishermen that have recorded their catch over time, and it appears, from those self-reported landings, that wenchman are in fact a small percentage of the total landings across the years of data that have been reported.

While this approach is problematic, and it makes us uncomfortable, and we would rather see a stable time period, the fact that the fishery-independent data show an uptick in CPUE, these random

surveys, that at least gives us some information that the recent increase in landings here reflects abundance and not change in targeting, or even change in retention, and I assume all the wenchman are retained and sold, because they have value, but maybe that could have changed over time.

Targeting, or changes in depth of fishing, could cause a shift in the catch, and then also just increased effort, and so we don't have any effort data for the butterfish fishery, but the fact that the fishery-independent survey data, in particular the camera survey, shows an increase in wenchman abundance in the recent years, it at least provides some evidence that this might be due, to some extent, if not wholly, to an increase in the relative abundance of this species.

CHAIRMAN NANCE: Thank you, Will. Roy.

DR. CRABTREE: Well, I feel like we need to bring this to some sort of a conclusion, because we've certainly discussed it. I mean, if they take wenchman out of the complex, I think that fixes one problem, which is the problem of having the queen snapper and silk snapper fishery closed because of wenchman catches associated with the butterfish fishery, and so that's an improvement.

It does look, to me, despite all the concerns and problems, that we can easily generate an ABC out of these landings, as we've done in the past. The trouble is though that the fishery still may catch it, and the wenchman may then close, and I'm not quite sure how we get around that. The problem, I think, is the accountability mechanism, more than anything else, and it just doesn't make sense to close this fishery when the ACL is reached, and so that's not really a science problem. That's a management Magnuson problem that would have to be worked out.

We do have fisheries where we've used alternative accountability mechanism that avoided closing the fishery, but I think that's something the council would have to work out, but, from what I'm seeing from the landings here, any way we do this, it's still quite likely that they catch it, and they won't be able to land wenchman, and that doesn't make sense from a management perspective, and I don't think it does the stock any good, but I think those are things that the council will have to deal with.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Mr. Chairman, and, Dr. Crabtree, to that point, because I think it's when the ACL is exceeded twice, right, one year after the other, for wenchman, or for this complex, I

think what it is, or the following year, and so --

MR. RINDONE: If the ACL --

DR. BARBIERI: In two consecutive years, you exceed the ACL, the accountability measure says that you have to close?

MR. RINDONE: No, and I think it's in the following year, and so, if it's exceeded in year X, then, in year X-plus-one, you monitor the landings and then you close it when the ACL is projected to be met.

DR. BARBIERI: This is something that is set up within the guidelines itself, or it's something that is within the purview of the council to set?

MR. RINDONE: So this is something that's under the purview of the council to set, and so the council could choose to do something more creative, from an accountability measure standpoint, and so perhaps something like, if the ACL is exceeded in a given year, then, in the following year, if the best scientific information available suggests that it's appropriate to do so, then the fishery will be closed when the ACL is projected to be met, and I am completely making that up, and so please don't think that that's an actual thing, because it isn't, but just to do something different, and I don't even know if we could do that, but --

CHAIRMAN NANCE: Tom, do you have -- Go ahead.

DR. FRAZER: I mean, there are lots of different potential alternatives, right, and you could look at the longer-term average and just say, if the average has been exceeded for some X number of years, or something like that, and, again, I think are creative ways to get around it.

CHAIRMAN NANCE: Personally, I feel comfortable with the two motions that we've made. I think, from a scientific standpoint, I think wenchman need to be removed from the complex, and I think we've asked for more data, and we're specific on that, so that, if we're asked to make recommendations on OFL and ABC, then we would be able to have those landings data to be able to, I think, more comfortably sit here and make those recommendations.

I feel a little uncomfortable making an OFL and ABC for wenchman based on this, and then what happens to the rest of the complex, and so I think we leave it alone for now as a complex, but we're making our recommendations to the council, and we'll be able to hear what they have to say on this issue.

I will make sure that I portray that, that the issue is butterfish and how it's prosecuted, and wenchman is a bycatch species, and it's taken as bycatch in the butterfish fishery, but it is utilized, and those types of things, if I don't hear any opposition to that from the SSC. Okay.

Then we'll go ahead and move off this topic. I greatly appreciate you guys coming. Thank you so very much, and it was really nice having you here. Ryan, we have Other Business.

OTHER BUSINESS

MR. RINDONE: Yes, and we need suckers for the joint workgroup, and so the council took the SSC's recommendation to heart, at its last meeting, to add up to five representatives from the SSC to the South Atlantic Council's SSC workgroup, in an effort to develop a cooperative workgroup focused on establishing a method for evaluating catch limits for federally-managed species currently closed to harvest, including goliath grouper. So, Mr. Chair, if you would like to solicit the body for up to five representatives, the council will gladly affiliate them with this workgroup.

CHAIRMAN NANCE: Okay. Let me see. It looks like I have Trevor. Trevor, do you have a comment? Go ahead.

MR. MONCRIEF: As the motion maker from that group, I am happy to be a part of this workgroup, and then he's not attending, but Jason Adriance also indicated that he wanted to be a part of it as well, and so I'm just throwing those names out there.

CHAIRMAN NANCE: So put down Trevor and Jason. Do I have any other -- Roy Crabtree.

DR. BARBIERI: And Luiz Barbieri, too.

CHAIRMAN NANCE: Luiz Barbieri. Good. I think that's appropriate. Any other SSC members that would like to be on this? David, you're certainly welcome to be on there. I think social science input is always welcome. Dave Griffith. Okay. With that, I think we've got five. Leann.

MS. BOSARGE: No, I don't want to be on that, but thanks for recognizing me.

CHAIRMAN NANCE: I know. We're done with that one, and I know it's a totally separate deal, but I saw your hand raised, and so certainly I will recognize you to speak.

MS. BOSARGE: Thanks. I just wanted to thank those fishermen, and I was trying to raise my hand on the wenchman, before you left. Thank you all for coming. I know a lot of you all came all the way from Bayou La Batre, and I really appreciate that. I know that I've been talking to Captain Early, who is offshore fishing in the Atlantic, and wanted to try to and get cellphone service, but wasn't able to, and I am very encouraged by the discussion.

Although we couldn't change our OFL and ABC, I think we really came up with some novel ideas, and I like Dr. Patterson's idea about using an index, like maybe the SEAMAP reef fish video survey and looking at those catch trends and adjust your quotas accordingly, just like we do for other species, for red grouper and things like that, where we look at a fishery-independent index and adjust it, and I appreciate Trevor's comments there, as far as looking at recent catches, because, unfortunately, on the commercial side, we're sort of boxed-in to what catch levels you give us, and that whole ten-year trend, and that average, that's fine if you're doing it for the very first time, to set a quota on a fishery, but, because we have mandatory reporting that is not real time, but it's pretty close, and we're managed to an ACT, it's not that likely that we're going to be able to fish freely and openly and exceed the catch limits you give us, and so we are sort of boxed-in, and so thanks for those out-of-the-box comments. Mr. Chairman, that ought to be the last time that I bother you, for several years, at least.

CHAIRMAN NANCE: I know that's not true, but it's never a bother. Any other business that we need to have before the SSC? Tom, we've got all the stuff we need, I think?

DR. FRAZER: I believe that we do. Thank you, guys, very much.

CHAIRMAN NANCE: We'll now open it up for public comment for the end of our meeting. Captain Eric will come up.

PUBLIC COMMENT

MR. SCHMIDT: I also would like to thank Andrew and Mike. It was very enlightening, and it was actually nice to come to a meeting and not have to talk about red snapper all the time, and I got to see a little preview of when I finally convince the council to take up the management of African pompano and the kinds of things that we'll have to go through.

Josh made some comments, during his presentation on gags, about a possible ecological shift in the Gulf of Mexico affecting the

population dynamics, and, while we have talked about ecosystem management, and we've, in recent years, addressed red tide events, we have a water quality issue, on the west coast of Florida, that is fairly significant.

It's not a red tide, and we've had massive trichodesmium blooms, and I talked to a fisherman last week, and he took a water sample offshore of Boca Grande, and the water was pink, and, when I say pink, he sent me a picture, and it was pink, like the inside of a conch shell, and so he froze the water, and then he sent it off someplace for analysis, and what we've had, over the last four years, from the divers that I speak with, is we've had a large thermocline area on the bottom.

The visibility, when they get in the water, is tremendous. They get fifteen feet from the bottom, and they can't see, and sometimes they said it's black, like they were diving at night, or it's lime green, and the water is very cold, and it will be ninety degrees at the top and sixty-eight at the bottom, and this has gone on for four or five years, and, when you get that temperature break, there is no fish.

I don't know where the fish go, but, if you happen to be sampling in that area at that time, you're going to show low catch rates, and the other thing about the ecological shift in the Gulf, and I have said this before, is that the population of red snapper have really exploded along the west Florida coast, and I probably have 750,000 GPS readings from Panama City to Key West.

I have some really good numbers for gag grouper, and you can't catch any, because, when you go there, the red snappers and the amberjack have basically overrun these spots, and I fished a tournament last year, and the first fish we caught off the spot was about a thirty-four-pound gag, and everybody else on the boat is hooked up, and we proceed to catch eighteen amberjacks, up to about eighty pounds, and so you can't get through these other fish.

I don't know if they're there, and I don't know if a video survey would document that the population is there, and I know that you've done a lot of work up in the northern Gulf, at the Edges and Steamboat Lumps and so forth, because that was considered a spawning area, but I know, along what we call the forty-fathom break, just to the west of Fort Myers, Christmas Ridge, on the break anymore is pink porgies, big beeliners, and red snapper.

We used to catch a lot of gags there, but I don't know if they're still there, but we can't get through them, but the populations of the other fish have really taken off, and so that's something, and

I appreciate Josh's comments about that, because there are some ecological things that have happened over the last few years, and so, anyway, thank you all very much.

CHAIRMAN NANCE: Thank you. Any questions from the SSC? Eric, we appreciate you being here, again. Any other -- It looks like we don't have any other -- I appreciate each of you being here, and I appreciate you being online too, and I know that some of you tried to make it and weren't able to, and I'm just glad you were able to make it back home safely, and so, with that, we'll go ahead and adjourn this meeting, and we'll see each other again in September. In August, we'll be -- I think it's a webinar.

MR. RINDONE: August 4 is a webinar with the South Atlantic Council to talk about yellowtail, and the joint part of that webinar should just be in the morning. The yellowtail portion of that should be all wrapped up by lunchtime on August 4, and so, Dr. Frazer, you're a very busy man and have lots of things to schedule, and you should be done by lunch on August 4.

CHAIRMAN NANCE: Okay, and so thank you.

(Whereupon, the meeting adjourned lunch on July 8, 2022.)

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