GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

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

GMFMC Office Tampa, Florida

JANUARY 10-12, 2023

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TABLE OF MOTIONS

PAGE 140: Motion that the SSC recommends not modifying the current catch limits for Gulf red grouper based on the 2023 interim analysis. The motion carried on page 140.

PAGE 248: Motion that the SSC recommends that the proposed Florida's calibration from SRFS to MRIP-CHTS for the private angling component of red snapper use data from 2018, 2019, and 2021 to determine the updated calibration ratio of 1.29 in numbers of fish and 1.34 in pounds whole weight. The motion carried on page 256.

PAGE 269: Motion that the SSC recommends that the proposed Alabama's calibration from Snapper Check to MRIP-CHTS (Snapper Check/MRIP-CHTS) for the private angling and state charter for-hire component of red snapper use data from 2018, 2019, 2020, and 2021, to determine the updated calibration ratio of 0.548 in pounds whole weight. The motion carried on page 273.

PAGE 283: Motion that the SSC recommends that the proposed Mississippi's calibration from Tails 'n Scales to MRIP-CHTS (Tails 'n Scales/MRIP-CHTS) for the private recreational sector of red snapper use data from 2018 – 2020, as the base years and restricts the harvest comparison to just Waves 3 and 4. The updated calibration ratio is 0.503 in pounds whole weight. The motion carried on page 290.

PAGE 298: Motion that the SSC moves to accept the SEDAR 75 Gulf of Mexico Gray Snapper Operational Assessment as consistent with the best scientific information available. Under the current FMSY proxy of F 26 percent SPR, the model derived estimates indicate the stock is not overfished and is not undergoing overfishing. The motion carried on page 301.

PAGE 301: Motion that, based on the projection settings accepted by the SSC for the SEDAR 75 Operational Assessment, the SSC recommends the following catch levels for Gulf of Mexico Gray Snapper, OFL be set as the yield (million pounds whole weight) at F 26 percent SPR and ABC as the yield at 75 percent of F 26 percent SPR for the period 2024 through 2028. The SSC also supports the constant catch scenario (which is a mean of the five-year period) that results in an OFL of 7.547 million pounds whole weight and an ABC of 6.226 million pounds whole weight. The motion carried on page 307.

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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 Tuesday, January 10, 2023, and was called to order by Chairman Jim Nance.

INTRODUCTIONS
ADOPTION OF AGENDA
APPROVAL OF VERBATIM MINUTES AND MEETING SUMMARY: SEPTEMBER 21-23, 2022 MEETING
SCOPE OF WORK
SELECTION OF SSC REPRESENTATIVE FOR THE JANUARY 30-FEBRUARY 3, 2023 GULF COUNCIL MEETING IN BATON ROUGE, LOUISIANA

CHAIRMAN JIM NANCE: Good morning. 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 is Dr. Tom Frazer.

Council Staff in attendance include Carrie Simmons, John Froeschke, Ryan Rindone, Lisa Hollensead, Jessica Matos, and Bernie Roy. 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 some the following topics: Review of SEDAR 75, Gulf of Mexico gray snapper; discussion of the ABC Control Rule modifications; evaluation of updated red snapper calibration ratios for Gulf state surveys to MRIP; review of the red grouper interim analysis and projections; and also public comment.

This webinar is open to the public and is being streamed live and recorded. A summary of the meeting and verbatim minutes will be provided and made available to the public via 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.

Once you have identified yourself, please re-mute your mic or line. To signal you wish to speak during the meeting, either raise your hand, if you're at the meeting, or use the raise-hand function, and the staff will display your name, and I will be able to see that. Please remember to identify yourself before speaking and also to re-mute your mic each time you finish speaking. We'll go ahead and take attendance now, Jessica.

MS. JESSICA MATOS: Lee Anderson. Luiz Barbieri.

DR. LUIZ BARBIERI: Luiz Barbieri.

MS. MATOS: Harry Blanchet.

MR. HARRY BLANCHET: Harry Blanchet.

MS. MATOS: David Chagaris.

DR. DAVID CHAGARIS: David Chagaris.

MS. MATOS: Roy Crabtree.

DR. ROY CRABTREE: Roy Crabtree.

MS. MATOS: Benny Gallaway.

DR. BENNY GALLAWAY: Benny Gallaway.

MS. MATOS: Doug Gregory.

MR. DOUG GREGORY: Doug Gregory.

MS. MATOS: David Griffith.

DR. DAVID GRIFFITH: David Griffith.

MS. MATOS: Paul Mickle.

DR. PAUL MICKLE: Paul Mickle.

MS. MATOS: Trevor Moncrief.

MR. TREVOR MONCRIEF: Trevor Moncrief.

MS. MATOS: Jim Nance.

CHAIRMAN NANCE: Jim Nance.

MS. MATOS: Will Patterson.

DR. WILL PATTERSON: Will Patterson.

MS. MATOS: Sean Powers.

DR. SEAN POWERS: Sean Powers.

MS. MATOS: Steven Scyphers.

DR. STEVEN SCYPHERS: Steven Scyphers.

MS. MATOS: Jim Tolan.

DR. JIM TOLAN: Jim Tolan.

MS. MATOS: Rich Woodward. Jason Adriance.

MR. JASON ADRIANCE: Jason Adriance.

MS. MATOS: Michael Allen.

DR. MICHAEL ALLEN: Mike Allen.

MS. MATOS: John Mareska.

MR. JOHN MARESKA: John Mareska.

MS. MATOS: Luke Fairbanks. Cynthia Grace-McCaskey.

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

MS. MATOS: Jack Isaacs.

DR. JACK ISAACS: Jack Isaacs, wishing everybody a happy new year.

MS. MATOS: Mandy Karnauskas. Josh Kilborn.

DR. JOSH KILBORN: Josh Kilborn.

MS. MATOS: Steven Saul.

DR. STEVEN SAUL: Steve Saul.

MS. MATOS: Tom Frazer.

DR. TOM FRAZER: Tom Frazer.

CHAIRMAN NANCE: Thank you, Jessica. We'll go ahead and move into the meeting now, and you've each seen the agenda, and we have three days of the agenda. Is there any modifications or changes to the agenda that anybody would like to have occur? Seeing none, is there any opposition to adoption of the agenda? Okay, and so the agenda is adopted.

You've all had the opportunity to look over the minutes and the meeting summary from last time, our September 21 through 23 meeting. Any changes or modifications to either the minutes or the meeting summary? Hearing or seeing none, is there any opposition to adoption, or approval, of the minutes and the meeting summary from last time? Okay, and so, without opposition, those are approved.

Item Number IV, Selection of an SSC Representative, I will be happy to go to the Gulf Council meeting in Baton Rouge at the end of this month, and so I will be going to that meeting and representing the SSC there. We'll go ahead and move into Item Number V, Review of SEDAR 75: Gulf of Mexico Gray Snapper, and Dr. Forrestal is with us, and I'm going to have Ryan go over the scope of work for that agenda item, and then, Dr. Forrestal, we'll go ahead and turn the time over to you for your presentation, and thanks for being here in-person. It's nice to have the Center here and be able to present that.

REVIEW OF SEDAR 75: GULF OF MEXICO GRAY SNAPPER

MR. RYAN RINDONE: She knew we had empanadas. Dr. Forrestal, from the Southeast Fisheries Science Center, will present the findings from the SEDAR 75 assessment of the gray snapper. SEDAR 75 resolved several concerns from the previous model, which was SEDAR 51, which was completed in 2018, and incorporates updated recreational landings data calibrated to the Marine Recreational Information Program's Fishing Effort Survey.

Dr. Forrestal will review the model's construction and development and included indices of relative abundance, base model estimations and results, diagnostics and yield projections, based on the council's status determination criteria. You guys should consider the information presented and make any appropriate recommendations about whether the assessment is consistent with the best scientific information available. You should also evaluate the projections and consider whether to recommend modifications to the catch limits to the council. Mr. Chair.

CHAIRMAN NANCE: Thank you, Ryan. Dr. Forrestal, we'll go ahead and have your presentation.

DR. FRANCESCA FORRESTAL: Thank you very much. Good morning, everybody. Thank you for having me. I'm going to be presenting the results of SEDAR 75, which is the operational assessment for the Gulf gray snapper.

To give just an overall of what I'll be speaking about this morning

and this afternoon, I'm going to go into the assessment history and any data review or updates, and I will then discuss the model-building process and configuration, as well as the assessment results and associated diagnostics. I will then, finally, present the benchmark stock status and the projections, and then we have several research recommendations. The final assessment report is on the SEDAR website, and so it is available for review.

This species was last assessed in 2018, under the SEDAR process, and this was the first time the species was formally assessed. It was a benchmark assessment, and is referred to as SEDAR 51 throughout this presentation. The data workshop was held in 2017, and then the assessment process took place between June and October of 2017. The terminal year for all the data was 2015, and the final results of the assessment were that it was not overfished, if MSST was defined as 50 percent of spawning stock biomass at the MSY proxy of SPR 30 percent.

However, after -- I think, during the SSC review, and during the review process, the SSC noted that the Reef Fish Amendment 44 was only appropriate for seven reef species, and gray snapper was not included in that amendment, and so, therefore, the MSST definition should have been one minus the natural mortality times the SPR 30 proxy, and so, in that case, using that definition, the stock was overfished. Then there was a review workshop that took place in 2018.

The stock ID for the species, as this was an operational assessment, we did not have a data workshop or any of the associated things that went along with that, and so we used the stock ID from SEDAR 51, and it has a working paper from the data workshop, and it showed that there are limited adult movement, from tagging studies, and the recommendation from the stock ID was that all Monroe County should be included in the Gulf. This differs a little bit from other species assessed in the Gulf of Mexico, as usually there is that cutoff at U.S. 1, and so some of Monroe County is not included in the Gulf, but, for gray snapper, all of Monroe County is included in the data.

There are differences between the Gulf of Mexico and South Atlantic, as seen in the genetics, but it's very difficult to proportion the data between the two regions, and so all of the MRIP data places Monroe County within the Gulf, and then there's no support for an east-west split in the Gulf of Mexico, as of now. Then, in terms of the statistical landings, all of Grid 748 was assigned to Monroe County, and then some of Grid 744, and so Florida Bay, Card Sound, and Barnes Sound are included.

The assessment process for SEDAR 75 included two topical working groups, and this was included in the TORs, and so we had a life history topical working group from December of 2020 through June of 2022, and that consisted of some internal calls and data scoping and then a recommendation call, in June, and then we also had a shore mode topical working group, in June and July, and that consisted of internal calls and a recommendation call, and then the table to the right shows all the attendees and participants in those topical working groups.

Regulations that apply to the Gulf gray snapper, for the assessment, are, in 1990, there was a minimum size limit enacted, or put in place, for twelve inches total length in federal waters, and then, also, in 1990, there was a ten-inch total length within the Florida waters. Gray snapper is also included in the recreational bag limit, and so it is included in the ten-snapper aggregate limit.

Focusing on the specific TORs for the topical working groups, they were to consider the SEDAR 51 recommendations for natural mortality. They set a maximum age of twenty-eight years and to apply a Lorenzen age-specific M vector and then consider bounding M between a target mortality of 0.13 and 0.17. It was also recommended to consider all SEDAR 51 recommendations for growth, to use all the data, regardless of sex, and then determine whether it is possible to predict growth within the model, and then, finally, consider any new recommendations from SEDAR 51.

The natural mortality, we used an age-specific M vector, estimated using Lorenzen, and we used a target M of 0.15, and this is calculated from Hoenig with a teleost maximum age of twenty-eight. The sensitivity runs used a maximum age of twenty-five as a lower bound and a max age of thirty-two as an upper bound. We did attempt to estimate M directly within the Stock Synthesis process, and so this replicates how M is calculated under the SEDAR approach, but it is explicitly done within the model, and this does account for using an estimated growth curve within the model.

We were able to estimate growth in Stock Synthesis, but, when we ran the diagnostics, it had very poor retrospective patterns, and so we decided that we were not going to estimate growth within SS, and we used the provided growth estimates from the topical working group, and so, because of that, we used the provided -- The same M vector as SEDAR 51, with the population age of twenty-eight.

Moving on to growth, there were two scenarios that examined the size-adjusted growth models. Scenario A used all fishery-dependent samples and assigned them a twelve-inch total length

size limit, and then Scenario B treated recreational samples differently, and so recreational samples caught within the Florida state jurisdictional waters after 1990 were assigned the ten-inch total length size limit, and then all the other fishery-dependent samples were assigned a twelve-inch limit, and so Scenario B is the one with the arrow associated with it, and you can see the values from that run.

The topical working group recommended Scenario B, and you can see the shift from SEDAR 51 to SEDAR 75 with the new growth model, and L infinity increased from just under fifty-five to just under sixty-one, and then there's some small shifts seen in the K and T_0 values.

Because we had the time, and the personnel, with the topical working group, we allowed for an exploration of differences in the growth curve between Monroe and non-Monroe County, and so that is what you see on the right-hand side. The Monroe County samples are in red, and then all other counties are in black or blue, and they're unknown. There was a change in how the commercial fleets were distributed between SEDAR 51 and SEDAR 75, and so this examination was very helpful when we were making the designations between the fleets, and so this will -- We'll come back to this when I present how the commercial fleets are structured.

Moving on to reproduction, there was not a lot of new data, and so, for fecundity, SEDAR 51 recommended a -- SEDAR 51 looked at batch fecundity, but the samples -- There were only six samples, and so they recommended that weight be used as a proxy for fecundity. While the sample size did double for SEDAR 75, this still was not sufficient to use weight as a proxy for fecundity. The sex ratio remains the same, and so 0.48 females is the most recent estimate of the sex ratio, and so we did a 50-50 split.

In terms of age at maturity, the age and size at 50 percent maturity for SEDAR 51 was 2.3 years, or 253 millimeters fork length, respectively. It was estimated that about 90 percent maturity occurred at 5.2 years, or 362 millimeters fork length. It was evident that a significant contribution to the spawning stock biomass, or spawning stock, was not really achieved until 300 millimeters, and so there was a lot of discussion about this during the data workshop for SEDAR 51 and throughout the assessment process.

For SEDAR 75, we did have an increase in sample size, and so the figure on the top-left is the number of samples available for SEDAR 51. SEDAR 75, the new data available, is shown in the top-right, and then all the combined data for all females is the bottom

figure, and so it did increase, for samples under 300 millimeters, to 126 females, from fifty-nine, and so more data was available.

There were two different ways to think about maturity, and, for SEDAR 51, individuals were considered mature at physiological maturity, and so these -- Using the new data, these are the results for physiological maturity, and that is two years, or 259 millimeters. Physiological maturity is individuals are considered mature for all secondary growth oocyte stages, including cortical alveolar, or CA, and so that is defined as physiological maturity.

However, if you look at it in terms of functional maturity, it's difficult to determine if females that had CA were spawning for the first time or had spawned in the previous season, and so, for SEDAR 75, the topical working group recommended that we consider functional maturity, and so that is a little bit older, of 2.5 years, or 269 millimeters fork length.

Moving on to the shore mode topical working group, this was done to reevaluate the gear selectivity, retention, and discards for the recreational shore mode. The rationale behind the TOR was that, early on, when the initial FES-converted estimates were coming in, they looked about nine-times higher than what was observed.

However, when the final numbers were in, the converted landings were only about two to three-times higher, and the majority of work needed on the shore mode was more on the modeling side, which was past the topical working group timeline, but this shows the changes in numbers of fish from SEDAR 51 for shore mode and SEDAR 75, and so SEDAR 75 is the darker-blue line, and it is higher, but it is not as much higher as was initially thought when these TORs were written.

To put this all in context, the model has three recreational fleets, and it also has a charter and headboat fleet, which is the charter mode from MRIP and then the headboat fleet, and they are combined, and then we also have the private mode fleet. Having the TWG allowed us to explore the peak that was observed in 1984 for the private mode, and so this 1984 landings estimate is about nine-million fish, and it comes from a single stratum in western Florida, in Wave 6, and in ocean less than ten miles. Looking deeper at the intercept records, there was a total of angler trips that resulted in a landings estimate of five-million fish from that single stratum.

From the topical working group, they recommended using a geometric mean among the nearby years' strata to smooth that 1984 private

fleet landings peak and then use that as an input for the estimated historical catches. The group also recommended using the Dirichlet multinomial error structure for length comps and then explore adding in age composition data, which is included in the assessment model.

They also recommended to explore using the provided CV, provided landings CVs, and then include discard composition data. Unfortunately, this data is very sparse, and there is none available for the shore mode, and so that is the end of the topical working groups and the data process, and so now I'm going to shift into the data review.

CHAIRMAN NANCE: Let me just ask. Is there any questions on that first part? Sean, please.

DR. POWERS: For that 1984 point, did you all consider just eliminating it, as opposed to smoothing it or using the geometric mean?

DR. FORRESTAL: Yes, we did, and we actually -- I am going to discuss that a little bit more in a few more slides, because using the geometric mean was not possible, as there were no data from the surrounding years in that stratum.

DR. POWERS: Okay, but you did explore just eliminating that point?

DR. FORRESTAL: I think the discussion is we didn't want to eliminate any data, but we did -- We looked at different modes of maybe smoothing it down, because it does occur in other species, and so it has been a common problem, how to treat those estimates.

CHAIRMAN NANCE: I am trying to remember the species, and I think it was gag maybe, that we had that same point. Anyway, and so we've tried to do the same thing here that we did with that one. Katie, please.

DR. KATIE SIEGFRIED: The reason that we didn't eliminate this one, the way we did with gag, where we just took the surrounding years and ignored that years, is because this was based on fourteen intercepts, and it wasn't a single intercept, and so we had a group discussion about that, and we had the MRIP data providers show all of the data around it, and so it wasn't as clear-cut of an elimination case as it has been for other species.

CHAIRMAN NANCE: Thank you. Any other questions on this first part? Paul, please.

DR. MICKLE: Thank you, Mr. Chair. In Slide 16, the recreational fleets, with this species, I would say it's more important than any, and maybe included in that statement would be yellowtail, but to look at the private fleet mode and to parse out public access, and so shore mode, right, and so, with this species alone, I would say that's definitely something that needs to be looked at very closely.

Then there's another red herring, where there is no data from the private shore mode, where there's private homes that you can't even do shore mode on, and this species is probably the most susceptible to that data gap than any, but, again, it makes folks feel better if you at least parse those out a little bit within the private mode fleet, just because I think it's encapsulated in private mode, which is shore and ramp, I'm assuming, and that's my question. Is the private mode encapsulating, within the MRIP data, both shore and ramp?

DR. FORRESTAL: No, the private mode does not include shore, and shore is split out specifically for gray snapper, and so it's a separate mode. It's a separate fleet entirely.

DR. MICKLE: But it's recreational?

DR. FORRESTAL: Yes.

MR. RINDONE: There's recreational shore, recreational private vessel, and then combined charter/headboat, and so shore is everything caught recreationally not on a boat, standing on the ground or a dock or something like that.

DR. FORRESTAL: Yes, and I was just putting this in context with the other two recreational fleets, and it will be clearer further on, and I have them all together.

CHAIRMAN NANCE: Jason.

MR. ADRIANCE: Thanks, Mr. Chair. A question about that, while we have this graphic up, and I noticed, around 2011 and 2012, there's this downshift in charter and this uptick in private mode, and I know we had BP in 2010, but is there any other explanation in that switch in the landings?

DR. FORRESTAL: None that I'm aware of, but perhaps someone who is more familiar with the MRIP or recreational fleet.

MR. RINDONE: I can't think of anything specifically that would have caused that, and so, I mean, the 2010 -- Obviously, the

closures were pretty widespread, but this is a species that has a considerable amount of effort nearshore, which would have been outside of a lot of those closed fishery areas, and so even then it shouldn't have been as much of an issue for -- Like that closure shouldn't have been much of an issue for gray snapper. Perhaps commercially, but not recreationally.

MR. ADRIANCE: I couldn't remember all the MRIP changes that were going on and whether that led to anything.

MR. RINDONE: So 2013 was when the new APAIS changes went into effect, and I don't know, Mr. Chair.

CHAIRMAN NANCE: Thank you. Doug Gregory, please.

MR. GREGORY: Thank you, Mr. Chair. It may also be a reflection of how Monroe County was treated in the two assessments, and I don't recall, you know, how Monroe County was included in the SEDAR 51 assessment, but a lot of our recreational harvest is coming from the reef area, and I doubt very little is coming from west of the Tortugas, which would be Gulf of Mexico, or northeast, and so, if Monroe County wasn't included as much in the previous assessment, that could account for some of that.

CHAIRMAN NANCE: Thank you. Okay, Francesca.

DR. FORRESTAL: Okay, and so this -- The table provides an overview of the data inputs, but I wanted to highlight some of the major changes that were done with the data for SEDAR 75. The commercial fleet structure has changed, and the SEDAR 51 data workshop recommended that fleets be split by gear type.

However, the assessment split the commercial by region and gear type, and so the SEDAR 75 commercial fleets are split by just gear type, and so, in SEDAR 51, we had the Monroe County vertical line, non-Monroe County vertical line, and longline. In SEDAR 75, we have vertical line, longline, and nets and traps, and I'm going to go into this in more detail, but I just wanted to give an overview first.

The recreational fleets are the same, and so we have the private mode, and so anything caught on a private vessel, then anything caught on shore, and so shore mode, and then the headboat and charter boat combined. There is -- We did not use a vertical line index in SEDAR 75, and it could not be extended past the IFQ period, and, also, the vertical line fleets are treated differently in SEDAR 75 than they were in SEDAR 51, and we're also using fishery-independent length compositions, and age compositions were

used for vertical line, longline, private mode, and the headboat and charter boat fleets.

These are all the data used in the assessment. Anything updated is in red, and so the vertical line fleet includes anything caught by vertical line plus spear and diving. Longline is anything that is not caught using vertical lines or nets and traps, and then there's nets and traps is the third fleet. We have private mode, shore mode, and the charter and headboat fleets, in numbers, and we have discards from the vertical line, longline, for the commercial, and then, for the recreational, we have private, shore, and charter and headboat.

There are two fishery-dependent indices, the private mode and the shore mode, and then the FWRI age-zero, which we modeled as a recruitment index, and the FWRI age-one, and we also have the SEAMAP trawl survey, and then the video survey is a change, as it is the updated combined video survey that has been used in recent assessments. There also is the reef fish visual survey, and there is only two more additional years for that survey, as it was not conducted in 2019 or 2020.

We have the length composition of the retained catch for all the fishing fleets and then the age composition of the retained catch. The vertical line ages are weighted, and the longline is nominal ages, and nets and traps are nominal ages. These were insufficient. They did not have a sufficient sample size to be included in the assessment, but the data is available. Private ages were weighted, and shore ages were nominal, and also of insufficient sample size, but the data is there, and then the charter and headboat ages were weighted.

The length composition of survey data was included, and it includes the SEAMAP trawl, the video survey, and then the reef fish visual survey. This is just a visual schematic of data sources and then the years used in the assessment for the data.

Shifting into the life history data, this was updated during the life history topical working group, and there were changes observed in the mean weight to fork length and then the age-and-fork-length relationship. As discussed, the natural mortality vector was not changed, and so that figure is the same.

Moving on to the commercial fleets, SEDAR 51 data workshop recommended these three fleets to be used in the assessment. During the assessment process, the fleets shifted to Monroe County vertical line, non-Monroe-County vertical line, and longline. The reason for this change occurred during the modeling process, due

to concerns with length composition weighting, because a lot of the data was coming from Monroe County, but best practices for data weighting has been updated, and so SEDAR 75 is using -- We used the recommended fleets from the data workshop.

During -- Because the fleet structure changed during the assessment process, this led to an error in the total landings used in SEDAR 51, and so the green line shows the data entered into the assessment model, while the purple line is the data presented at the data workshop, and then SEDAR 75 is in orange, and so it shows the updated data available.

Splitting this out into fleets, you can see that the longline landings, for SEDAR 75, differ in about -- Beginning in about the mid-1990s, and then the Monroe County fleet has the largest discrepancy and so SEDAR 75 is in orange, and SEDAR 51 is in green. There was very little differences seen for the not Monroe County landings.

Putting this into context, the recreational fleets are the major components of the landings, and so the gray is recreational landings, and the orange are the commercial landings for gray snapper, and then the private mode is the largest component of the recreational, in gray as well, and so, when we discovered this, we did a sensitivity run with SEDAR 51, the assessment model, with the corrected commercial landings, and so you can see the differences between the model results. SEDAR 51, the base model, is in blue, and then with the updated commercial landings is in red. Then there is very little differences, some in the spawning stock biomass, but, overall, they're very similar.

Moving on to the recreational fleets, these are all the fleets, and this includes private shore and charter boat, and so this is after the calibration, and the SEDAR 51 is pre-calibration, and then SEDAR 75 represents post-calibration, and then the figure on the left is AB1, and so anything caught, or anything landed, or reported to the interviewer, and then the figure on the right is B2, and so the discards, and you can see the differences mainly show up in the discards, post-calibration.

CHAIRMAN NANCE: Trevor, you had a question?

MR. MONCRIEF: I mean, that spike on discards kind of caught my eye for the terminal year, 2020, and did you all look into that at all?

DR. FORRESTAL: We did not specifically look into that, no.

MR. MONCRIEF: Okay. It looks like it's a Wave 1 estimate from Florida of about six-million pounds, which is two-million pounds higher than the highest record wave in Wave 3, and higher than any other thing in the time series. It seems like it might be something to look at, because it looks like that's what is driving that large increase for the terminal year.

DR. FORRESTAL: I will dig into what that is further. I also wanted to show how the recreational fleet landings changed, proportionally, pre-calibration and post-calibration, and so this is the breakdown, by fleet, between the two assessment models, and so there are some shifts in the proportion seen, and, for example, the headboat and charter boat fleet is a smaller proportion, as compared to SEDAR 51, and the shore mode is a larger component of the recreational landings, as compared to SEDAR 51.

Going into the individual fleets for recreational, we have private mode, again looking at that 1984 landing estimates, and it does come from a single stratum, but is, as Katie mentioned, from fourteen angler trips, and so it is not an isolated incident. When we tried to smooth the 1984 landings, there was no data in the surrounding years from that stratum, and so there was nothing in 1981, 1982, or 1985, and so we used the landings from 1986, and so this was a replacement value of 2,500,000 fish, roughly, and so the figures on the bottom have differences in how this peak influenced the historical landings, and this is just for private mode.

You can see that 1984 peak has a lot higher historical landings when you back-calculate, and so the figure on the right is what was used in the model.

CHAIRMAN NANCE: Sean, you have a question?

DR. POWERS: I think what I'm just not following -- So you said there was no landings in that stratum on the surrounding years, and so is there an estimate for 1983 and 1985, if there is no data?

DR. FORRESTAL: We were able to do the geometric mean, because there was no data, and so we used the value from 1986.

DR. POWERS: But how did the estimate get derived from 1983 and 1985 if there was no data?

DR. FORRESTAL: It was just in that one specific stratum. There was data in all the other stratum, but, just for that, and it was west Florida private, Wave 6, that ocean. When you broke it down to that finite scale, that's when we saw no data.

CHAIRMAN NANCE: Thanks, Sean.

DR. FORRESTAL: Then these are the other two fleets for recreational, the shore mode and then the charter and headboat, and this is AB1. These are the historical recreational landings, with the 1984 peak in for private, and then that 1984 stratum replaced with the stratum data from 1986, and these were estimated using the FHWAR method.

We did a run using the updated recreational landings, up until the terminal year of the model, 2015, and so this shows how the model would have changed with the converted recreational landings.

For discards, SEDAR 51 modeled them as an annual proportion of discards, rather than the absolute magnitude, and the rationale behind this was due to the change in fleet structure, but, for this, for SEDAR 75, we were modeling them in absolute magnitude, but I wanted to show the differences in discards after the calibration, and so these are the proportional discards to total, all landings, for private, shore, and charter/headboat.

While the absolute magnitude of the discards have changed, the proportion to landings does not really appear to have changed, except for perhaps the early years of the charter/headboat fleet.

These are the total discards for the commercial fleets on the left, and then the recreational fleets on the right. There was no data available for the commercial nets and traps, and so that's why this is not reflected there. The commercial discards are very, very small. If you look at the commercial vertical line, it's about 1.5 thousand fish, and then the longline is very small, until you get to about 2012 or so, and the figure at the bottom shows the proportion of discards for each fleet.

Looking at the three recreational fleets, the majority of discards, over time, do come from private, but shore also is a significant contributor, and then the charter/headboat fleet have very minimal discards, it appears, proportionally to the other fleets.

The discard mortality rates remained the same from SEDAR 51, as there was no new data available, and so the commercial discard mortality rate is at 14 percent, and then the recreational discard mortality rate is 6.9 percent. There is insufficient sample size available for discard length compositions, and the discard mortality rate is the same.

DR. TOLAN: It's not so much of a question, but just an observation,

and I may point this towards either Ryan or Doug, but, on Slide 33, the shore mode, and I will preface this by saying we don't have a minimum size in Texas, and so it just seems -- That's a big number, that nine out of ten fish are discards, for shore mode, and it just seems like a really, really big number, and I'm in the back of my head, thinking about catching gray snapper along the Texas coast, and, even with a ten-inch minimum size, it might be 50 percent, but I just -- Is that what you see here in Florida, that 90 percent are discards?

MR. RINDONE: This is a tricky question to answer, because I'm not going to fish where I'm going to discard 90 percent of the fish that I could be catching, but, when I think about places like the Keys, and Doug can add in on this, but you've got guys that are fishing on bridges in the Keys, and I've dove under some of those bridges, and there are swarms of just tiny little mangos swimming around under there, and so it's very reasonable that there could be a large number of eight or nine-inch mangos that are biting on these tiny little hooks.

I am not comfortable saying that 90 percent is -- It is high, and I'm uncomfortable saying it's too high, because I see a lot of small fish get brought up in those areas, and Luiz can speak to this, too.

As soon as you set foot on a boat though, your odds improve, just by getting in a little bit deeper water, but, underneath those bridges and stuff, there's a lot of consistent pressure that is applied on those bridges, especially in places like the Keys and southwest Florida.

DR. TOLAN: We see the same thing on the jetties in Texas, and any of our fish structure, where these things are really, really common, but that 90 percent number just -- It struck me as that's got to be way too high, and so thank you.

CHAIRMAN NANCE: Luiz, to that point?

DR. BARBIERI: Jim, to that point, I think it's a matter of scale, right? I mean, what you're saying makes perfect sense for Texas, but because, here, the abundance is so much larger, right, and the fishing pressure is also so much larger, right, and so the two I think compound each other, and, to me, it's high, but I'm not sure it makes my head explode, for that reason.

CHAIRMAN NANCE: Doug Gregory, please.

MR. GREGORY: Good morning. Thank you. I agree with Ryan and

Luiz. The interesting thing -- You know, we have forty-five bridges, and we have a lot of people from Miami who come down and fish the bridges who don't -- They're either not cognizant, or they don't care about what the rules are, and there's always some arrests going on for undersized fish from the bridge fishermen, but an interesting thing is, in Florida -- Back in the early 1990s, when we were first considering size limits, *The Florida Sportsman Magazine* had an opinion article about how devastating the ten-inch size limit was going to be, because it was going to wipe out the recreational fishing industry.

I saves it for many years, but I recently discarded it, but it was so alarming that they were alarmed about a ten-inch size limit, but you've got to remember that, back then, there -- Those were the very first regulations, and people were, you know, worried about how impacted they would be, and so, all together, I think there is a lot of undersized fish being caught in the shallow waters off the bridges.

CHAIRMAN NANCE: Thank you. Carrie.

EXECUTIVE DIRECTOR CARRIE SIMMONS: Thank you, Mr. Chair. Good morning, everyone. Yes, and so we've caught them in the Chas in the wintertime in fresh water, and they're very euryhaline, and they're small fish, and they're voracious, I mean, and they're all less than ten inches. They will hit the bobber, and the kids love it.

MR. RINDONE: The Chassahowitzka River is in the Big Bend area, for those not native to that area.

CHAIRMAN NANCE: Paul.

DR. MICKLE: I think everybody has said what I was about to say, but, with public access points, you obviously -- I think it's easy to understand that local depletion occurs at public access points, and, again, I will bring up the other point of, when you talk about private homes, I would most likely think that there would be a higher retention rate there, because the pressures are so much lower, and so this data is only representative of public access points, and it's not truly representing private shore landings. Thank you.

CHAIRMAN NANCE: Thank you. Trevor.

MR. MONCRIEF: I mean, with folks fishing from shore, and, I mean, obviously, they're not really impacting the harvest rate that much, and they're mainly releasing a lot of their catch, and a lot of it

is undersized, and so I can understand the argument here, but the concern I've always had, based on observations from our state, and essentially how large in magnitude the shore effort is, it seems like, given what I'm looking at, and how the peak waves shift across year-by-year, I wonder if it's worth looking at the discards, to see how much is truly impacting the end result of the assessment.

I just feel like, anytime you involve the shore fleet, that overexpansion happens quickly, because of the amount of effort that comes out of the shore fleet, and, if those discard rates are just anywhere -- If they're existent, then they automatically get blown up. I think it would be -- You know, it's something to think about. You know, are we just arguing to -- Or are we just having a discussion that really doesn't amount to anything, or, if there is a change in discards, does that actually shift the results of the assessment at all?

CHAIRMAN NANCE: Thank you, Trevor. Jack.

DR. ISAACS: I was struck by the difference between the discard mortality rate between the commercial and recreational, and is there any speculation what that might arise from?

DR. FORRESTAL: I might give that to Ryan, in terms of --

MR. RINDONE: Sure, and so there were a couple of studies that we looked at that were hosted by FWC that examined discard mortality, as well as some feedback from the fishermen on this, and so one of the things that we talk about, with a lot of reef fish, is barotrauma, which isn't as much of an issue for gray snapper, for a couple of reasons. For the recreational fishery, a lot of these fish are being caught in waters where barotrauma is not much of an issue, and so waters twenty meters and shallower, and then especially when you're up against shore, and it's not a consideration.

A ten-inch minimum size limit, in Florida state waters, is pretty generous, all things considered. Twelve inches, for federal waters, is also pretty generous, and then, in state waters, there's a five-fish recreational bag limit, I believe, and then up to ten fish in federal waters, and so the regulatory environment on it, from the recreational side, is such that there's not a lot of cause to discard these fish, and, from the commercial side, there's no commercial trip limit, and, with a twelve-inch minimum size limit, commercial fishermen don't fish for small fish, and it's just not an economically-responsible practice, and so the number of fish that they would be discarding would be pretty low, and where those

fish would be that they would be discarding them is going to trend towards those shallower waters, you know less than twenty meters, where barotrauma is not as much of an issue.

When you combine that with circle hook requirements, most of those fish are being hooked in such a manner that terminal hooking injuries should also be low, and so this combination of generous harvest practices, and where the majority of these fish are caught, just puts them in a situation where release mortality is inherently going to be low, and so across-the-board.

CHAIRMAN NANCE: Katie, please.

DR. SIEGFRIED: Thank you, and I'm just trying to keep track of sources of uncertainty, right, because that's what we'll come down to at the end, when we're talking about what sensitivities are needed and what we project.

Two questions, or maybe one comment first, on Trevor and other people's points about discards, and we've had a lot of feedback about the level of discards, particularly in the recreational fleets, and you will see the model fits in a little bit, and I don't want to steal Francesca's thunder, but we do allow quite a bit of uncertainty around those discards, and we can discuss more the individual year intercepts, if we want to look at that working paper, and so we can take a look at that uncertainty a little bit later, but I had a specific question for Paul, if I may.

You mentioned the private or -- Sorry. The shore mode and the private home component of shore, and you saying that the shore mode might be a floor of what the real estimate should be? I am thinking of uncertainties, and so you're saying there's quite a bit of effort, or catch, discards, that we're not accounting for, because it happens on people's private docks, and so would you say that -- I think of floors and ceilings, and are you saying that this is a floor and that we're not getting a lot more above this floor, or how would you phrase that for an uncertainty analysis?

DR. MICKLE: Katie, I guess, to your question, I would say I think we all need to have a discussion about this. I'm just one of the scientists here, and, if it's not a concern of others, then maybe it's not a floor, and there is no data to actually estimate, right, of the uncertainty, and so you kind of have to look at it from holistic view and then a view of maybe some other efforts around the Gulf looking at private landings and how they've been acquired, to try to estimate uncertainty, to understand that.

One thing you said with your question was -- In my opinion, I would

say it's missing a floor, in the sense of discards and landings, because you just -- Nobody knows, but, I mean, you can do surveys, internet-based surveys, and then the GIS folks have a ball with this stuff, because then they start pulling up all the private homes and doing estimations like that, and extrapolating out, to provide some sort of estimation, in some sense, but it's a great way for a research track to dive into something like this, but, again, you all know, better than I do, there is very few species that this is as much of an issue as this one, and so that's why I brought it up this morning, and so maybe, if we do have a discussion about it, maybe we can help with some estimations or strategies of such estimation, and so I don't know if I answered your question, Katie, but I tried.

CHAIRMAN NANCE: Paul, thank you, and I think, Trevor, to that point?

MR. MONCRIEF: To that point, since the FES send-outs are sent out to not only license holders, but also just general households across the entire state, it covers what would be considered private home effort. The difference will be the catch rates, or anything else, are different across those two fleets, and so, you know, I've got a different mindset on it, just because of the magnitude of the shore effort, and the prevalence of it, and how that estimate just gets huge quick, but, no, it should be considered a ceiling, to my point, because I think the effort side is covered, but it's just the other variables are different, and that's what is going to make the difference.

CHAIRMAN NANCE: Katie, please.

DR. SIEGFRIED: Thanks, Trevor, and thanks, Paul. I am not going to hold you to anything where you're just thinking, and it's okay, and I don't think that it's a true floor, but it's just one of the sources of uncertainty that we have to think about when we're figuring out the uncertainty around that estimate.

There could be overestimates of something else that goes into the calculation, as Trevor is concerned with, and so there's also something that other folks have been communicating to Francesca and I about, repeated discarding, which, again, I have no idea how to calculate, for this or any other species, but I think it's worth thinking about when we're discussing uncertainty about either discards or landings.

CHAIRMAN NANCE: Perfect. Paul.

DR. MICKLE: Sure, Katie, and I'm glad to hear that, and that's a

difficult, repeated landings, and Mississippi had a former commissioner that kept bringing that up with spotted seatrout, and survivorship with repeated landings and things, and we were just totally stumped of how do you -- A pilot study? I don't know, but, as these stock assessments become more and more complex, and research tracks become -- Are there for these types of interesting avenues to go down, and so, anyway, I appreciate the conversation. Thank you.

CHAIRMAN NANCE: Thank you. As we talk about the data inputs, and that's what we're doing right now, and then try to think about how that impacts the assessment. Francesca, go ahead and continue, please.

DR. FORRESTAL: Okay. Thank you.

CHAIRMAN NANCE: I'm sorry. Doug, please.

MR. GREGORY: Well, I took my hand down, but thank you anyway, because Trevor said what I was going to say. For a number of years now, since we, you know, started talking about FES and how we're changing the surveys, I've been concerned about the difference between the private boat fleets that leave from houses on canals and rivers, versus the boats that are intercepted at the public access points.

Clearly, the private -- The ones leaving from shore, from their houses, are probably better fishermen, and they fish longer days, and they're answering their FES surveys, but their samples -- But their catches are not being sampled, and I would be curious to try to figure out how that influences the final estimates. Thank you.

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

DR. KILBORN: Thank you. Yes, and I just wanted to follow-up on that point, because this is not the first species that we've had this conversation about the private anglers, with their own access points, and so I'm not sure if this is the case, but it feels like it has the potential to be a fleet that we're missing, right, and like they could have their own dynamics, and their own activity, that we're lumping in with some other fleets that, you know, maybe we shouldn't, and so I don't know if we have the data to actually do anything with that, but I do think that's it's right that we're having a conversation about it and that we keep an eye on this sort of thing, moving forward, with other species as well, because I do think that we might be missing a big piece of the puzzle here. Thank you.

CHAIRMAN NANCE: Thank you. Harry.

MR. BLANCHET: Thank you, Mr. Chairman. In this discussion of discards, I heard two possible issues with discarding, one being an abundance of small fish due to localized depletion and the second one being an abundance of small fish due to it being nursery habitat, or sub-juvenile habitat.

At least in Louisiana, that second is the more relevant point, and it's not a localized depletion that leads to a lot of undersized releases, but it's the fact that this is just -- Those shore areas are not habitat where you would ever see twelve-inch gray snapper. However, I can't speak to what might be going on in that area of the Florida Keys, where you've got all of those pier fishermen, or bridge fishermen, and so that may be a different issue in that part, but, at least for our area, I see it more as a habitat.

Where this goes is it does matter, when you're talking about -- Whether you're talking about local depletion or whether you're talking about habitat, when we talk about what effects changes in regulations may have. Thank you, sir.

CHAIRMAN NANCE: Thank you, Harry. Jack.

DR. ISAACS: You mentioned the private anglers thing, and this is just a foggy memory of mine, but I can remember, after the oil spill in 2010, that somebody did do some surveys on private anglers and whatnot, as part of the whole damage assessment process, and I don't know if those data are available, or even what they look like, but there might be some data on that, at least for that time period, in case somebody is curious.

CHAIRMAN NANCE: Thanks, Jack. Certainly the recreational component is a very diverse one. As we get into these different fish, it's harder and harder to partition out all these separate groups. You're sampling for a large group, and yet there's all these sub-components that are taking place. Ryan.

MR. RINDONE: Thank you, Mr. Chair, and so I was battling back there with John and Carrie a little bit about this, and so I wonder the degree to which the estimate being too high, or too low, with respect to the private access points that Dr. Mickle was talking about -- Whether that's accounted for in the effort side of the survey, because the people that live at this private access points are equally susceptible to being surveyed, from the FES side of things, as anybody else is, and so, at that point, it becomes, I guess, a concern about the composition of catch, and so is the composition of catch at a dock at Davis Island, right over here,

any different from the same composition of catch that you might see at the Gandy Boat Ramp?

I don't have any reason to believe that they would be that different, because those private access points are equally accessible by any boating angler, and so I don't know that I would think that they would be that different, for any particular reason, and so the composition of catch should be somewhat consistent. The amount of effort by area certainly would vary, but that effort environment should be captured by the survey.

CHAIRMAN NANCE: Jason.

MR. ADRIANCE: Thank you, Mr. Chair. I mean, I tend to agree that the chance of capturing folks in that effort survey -- You're likely getting that component of the private effort, and, the composition, I think you may be right, but I think it's the catch rates that's probably the biggest source of uncertainty, and are those catch rates similar, given the potential avidity and skill of those private anglers.

CHAIRMAN NANCE: Thank you, Jason. Will.

DR. PATTERSON: You know, the two issues of proportion of catch that's discarded, there are data that inform that, you know, and it doesn't change between the two assessments. The other issue, about whether a private recreational catch is the same as, you know, leaving from a private dock, versus a public access point, we've talked about this in other situations, and we don't have any data to inform it, and so our discussion here is all speculative, and we're going to be left with what's here, and so I don't know how to fix that at this stage.

CHAIRMAN NANCE: It was a good discussion, but there's not data, for sure. Steven.

DR. SCYPHERS: Thank you, Mr. Chair. Yes, I agree with Will, and I think some of these things are important to talk about, but we're not going to have, you know, clear answers. Overall, I do think the 90 percent from the shore mode is a reasonable number. We've done a lot of field work, interviewing shore-based fishers throughout the Keys, and there are a lot of undersized fish.

One of the areas that uncertainty comes in though, on the private residents versus the public access points, that hasn't come up yet is a lot of the public points of piers and, you know, easy access to shore are some of the more artificial-built environments, and they're more seawalls, and there is less natural habitat, to where

the private residences have better access to mangrove, and so you could have different size structures of the fish in those different areas, pretty predictably.

When we do visual surveys along the mangroves, you do get some of the larger fish there, and so you could have different things going on, and I don't think we have the data to really talk about it, but it's something that, you know, could be looked at further ahead, but, from the shore, where most people are fishing, it's pretty small fish, where most of them are getting tossed back.

CHAIRMAN NANCE: Thank you. Francesca. Trevor.

MR. MONCRIEF: Just real quick, and, I mean, I hate to keep spinning around on this one, and it seems like we've done it for, you know, a lot of different species, and has there ever been a sensitivity analysis, or some analysis, to look at, you know, if you drop discards by a third, or if you increase discards by a third, how that actually affects results, because, if it truly doesn't have much of an effect, we can spin our wheels all we want to on it, and come up with the best way to do it, and, at the end of the day, it's not going to have any effect.

DR. FORRESTAL: That is captured in how we model the discards, is we have a very high uncertainty associated with them, to kind of cover all this discussion and the nuances around it.

CHAIRMAN NANCE: Thank you. Francesca, go ahead with the presentation, please.

DR. FORRESTAL: All right, and so I am now going to shift into the indices. For this assessment, we have two fishery-dependent ones, one for the private mode and one for the shore mode, and this data is just from Florida west coast, and is the same trip selection process used for SEDAR 51, and so SEDAR 51 is in gray, while the updated is in blue, and, in the figures below, you can look at the number of proportion positive trips and then the number of trips that were selected, using the Stephens and McCall approach for the private mode, and then, for the shore mode, we had to use Guild, because there weren't enough trips for a Stephens and McCall. There are some differences, but, overall, the trends are similar between the two assessments.

Shifting into the fishery-independent ones, we have FWRI age-zero and age-one. The age-zeroes were entered into the model as a recruitment index, and there are very few differences between the two models, the data inputs, and then, for the age-ones, SEDAR 51 has slightly higher values, as compared to SEDAR 75, and then there

is a working paper associated with this dataset, and it shows where these surveys were conducted along the west coast of Florida.

DR. PATTERSON: Mr. Chair, I have a question.

CHAIRMAN NANCE: Yes, please.

DR. PATTERSON: Thank you. Francesca, can you go back one, to the previous, the age-zero and age-one, and so, not to steal your thunder, but, you know, skipping ahead to what might be driving the estimated upturn in biomass in recent years, recruitment is a strong signal here, but I'm curious if, in the data analysis component of this assessment, if you guys looked at if the catch is moving up the west coast, and if they have changed over time, if this recruitment uptick is an expansion of nursery grounds, due to potentially climate issues, or did you examine any of that, or is this just in the historic area, where recruitment typically has occurred, that it's now higher, or it has been higher over the past ten years?

DR. FORRESTAL: Unfortunately, we did not have time to really delve into that level of detail, and this was just an operational, and so it was looking at what data sources were available, but that is really -- It's a very interesting point, and it would be a good research recommendation, to dig deeper into that.

This is the SEAMAP trawl index, and there are very few differences seen in the available data, and it ran from 2010 to 2015, and so this is a shorter time series, and so, for SEDAR 75, we have more data. Length compositions were not used in SEDAR 51, but we used them in this assessment model, and so you see the frequency distribution of the length, and then the figure below shows the sampling, and all the blue dots are where there were zero gray snapper observed, and the red is where the magnitude of the gray snapper were observed, and there is also a working paper associated with this dataset.

This is the combined video index, and this includes the NMFS SEAMAP reef fish video survey, the NMFS Panama City Lab survey, and then the Florida Fish and Wildlife Research Institute video survey, and then we have associated length compositions for this survey as well.

The biggest changes between the fishery-independent index is from the reef fish visual census, and it is a little patchy, because it wasn't conducted in 2013, 2015, and 2017, or 2019 or 2020, but we do have available length compositions for this survey, and there is a working paper associated with this, and you can see where all

of these surveys were conducted in the Florida Keys.

Putting all the available fishery-independent length compositions together, this is the distribution between the surveys, and so the smallest fish were observed on the reef fish visual census, and then the SEAMAP trawl, and then the combined video index has the largest fish observed.

These are all of the length compositions used within the assessment model, and it is sparser than what is available, because some of the years that are available, in terms of length compositions, were removed, because there are years that have available age compositions, and so, to avoid double-counting, we pulled out the years with length compositions to use the age data.

This is the breakdown of the available age composition data. On the top-left panel, we have the commercial vertical line, and then the commercial longline in the middle, and then the bottom is the recreational private. The recreational shore mode is at the top, and then the recreational headboat/charter is this figure right there, and we did explore including the shore ages. However, we omitted them, to keep the years with length compositions.

As shore is an important component of the fleet, it's quite sparse, when it comes to the available composition data, including length and ages, and so we wanted to use all the available data we had for the lengths for that one. You can see the distribution of available ages across the time series, as well as the age estimates, along the Y-axis.

An ageing error matrix was used, and this assumes error within expert agers, and so this is the associated ageing error matrix, and so that is all that I have in terms of the data update, and I don't know if we want to -- If there's any more questions or discussion.

CHAIRMAN NANCE: Okay. If there's any questions on what we've gone over for data, essentially the data inputs into the model, let's go ahead and take those. John, please.

MR. MARESKA: I want to go back to Slide 36, where I think Will brought up a point, but I was just curious, and was there any discussion about why these indexes are counterintuitive, and so the zeroes are going up, over the past four years, but the ones are going down, and so I would think those would follow similar trends, and there seems to be something fundamentally different, you know, with the age-zeroes through the time series. There's a lot of variability there, and so why, in the most recent time

series, does it seem to be more stable?

DR. FORRESTAL: I would have to look more deeply at the working paper, but I also think it has to do with the timing of when these surveys are conducted, and I don't know if they are at the same time every year or -- That is something that I can look into further and get back to you on.

CHAIRMAN NANCE: Okay. Any other questions? Katie.

DR. SIEGFRIED: I don't have a question, but I just have a clarification for John, because I was looking at this working paper, and it says that the age-zero survey collected -- They're saying samples during the recruitment window of July to December, and the age-one survey collected with larger seine over all months, and so, depending on the targeting, depending on the discarding, depending on environmental conditions, the age-one index could potentially have a different trend, because of the longer sampling period, but that's just from a quick read of the working paper.

CHAIRMAN NANCE: Thank you. David, please.

DR. CHAGARIS: Since you have the working paper open, is this an age-one or an age-one-plus index, because you said it came from the large seine.

DR. SIEGFRIED: Yes, and it's age-one-plus, from my reading, and I don't know if Luiz is familiar, off the top of his head, and like all Florida things are just always in his brain, but that's what I can see from the paper, and that's why we treated age-zero as a strict recruitment index and didn't apply only an age-one selectivity to the age-one index. We gave it age-one-plus.

DR. CHAGARIS: Age-one-plus, and so it has selectivity across multiple ages. Okay. Thank you.

CHAIRMAN NANCE: That's a good clarification, and it's more than just the age-one group. Doug.

MR. GREGORY: Thank you, Mr. Chair. Just a curiosity. With the exception of the last three years, and two of the previous years, these age-zeroes sawtooth pattern is from one year to the next, which suggests some sort of density dependence going on, and I wonder if the age-one, or age-one-plus, might be a better index of recruitment than the age-zero, because, as someone pointed out earlier, if you look at the age-zero throughout the years, there essentially is no difference in the average, or the moving average, of that year class. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Will.

DR. PATTERSON: There could also be some density-independent things going on here with the age-zeroes. As Carrie pointed out earlier, you know, these small, young fish occur way up into fresh water, and, as they get older, some fish stick around, but a lot of fish leave and go out into the estuary, or offshore, and so where the FIM sampling is occurring -- You know, in a given year, the fish could be farther up in the fresh water than where they're seeing them, and so a lot of that variance in recruitment at age-zero can be driven by things outside of abundance.

CHAIRMAN NANCE: Thank you, Will. Okay. Francesca, let's go ahead and go on to the next topic.

DR. FORRESTAL: Okay, and so this the base model development phase, and these are the steps undertaken to update the SEDAR 51 assessment model, and so we started with the base model, which was built in Stock Synthesis Version 3.24, and this was converted to 3.3.17, and this is a more updated version of Stock Synthesis, and there was very little change in that transition.

Then we did the corrected commercial data and then extended the recreational data through to 2020, and then all commercial and recreational data were updated through 2020, with the updated commercial fleet structure. Step 5 added in the fishery-independent length composition, and so there's a lot more data into the model, and then, in Step 6, again, more data was added with the age compositions.

Then we have a run with the maximum age of twenty-one, which was what was in SEDAR 51, and then this final one has a maximum age of twenty-eight, including the bias ramp correction, and there were many, many, many steps between each one of these, but this just gives an overview of the main changes. Looking at how this affects the spawning biomass and the recruits, the SEDAR 51 base model is in the dark-blue color, and then the final model is in the red, the Run 8, maximum age twenty-eight.

Shifting now into how this base model was configured, any changes from SEDAR 51 appear in the darker-blue color, and we have a maximum population age of twenty-eight. In SEDAR 51, it was a maximum population age of twenty-one. We used twenty-one-plus as a plus-group for the age compositions. We estimated A min within the model. In SEDAR 51, the A min was fixed at 15.01.

For recruitment deviations, the main recruitment deviations were

estimated from 1981 to 2020, and 1981 is when the data becomes available, all the length composition data is available, and then the early recruitment deviations began in 1951. The SEDAR 51 estimated recruitment deviations from 1970 to 2015.

There is time-varying retention to account for changes in the size limit regulations, and so the most recent block was extended through 2020. We used a Dirichlet multinomial likelihood for all the composition data, and this is an updated best practice. The previous assessment used a Francis reweighting process for all the length composition data.

The changes in selectivity, all of the fleets have the same selectivity patterns as used in SEDAR 51, and so it was dome selectivity, a double normal, for 51 and 75, and the private -- Sorry. The age-zero is modeled as a recruitment index, and then age-one, for this model, for SEDAR 75, has a one-plus group, as discussed.

SEDAR 51 treated the SEAMAP trawl as a recruitment index, and, as we had composition data, this was a dome-shaped selectivity. In SEDAR 75, we have a logistic and the combined video index, and then the reef fish visual survey is dome-shaped. The other major changes come into how these fleets were mirrored, and so, for the private index, the SEDAR 75 mirrors the age selectivity, and then SEDAR 51 mirrored the private length selectivity, and then there are -- This might differ from what you have, because I noticed a few errors on this slide, and so I just wanted to point out that this is perhaps different from what was in the briefing book, but the short index, for both models, mirrored the shore length selectivity.

For SEDAR 51, the age-one index mirrored the shore length selectivity, and then the video index mirrored the private length selectivity, and then, also, the visual survey also mirrored the private length selectivity, but, since we have length compositions for these surveys, mirroring was not necessary, and so that’s why it's not in SEDAR 75.

CHAIRMAN NANCE: Dave.

DR. CHAGARIS: I have some questions about how selectivity is handled in here, with the length and the age comps, and so, if I looked at the report correctly, it appears that you’re estimating both a length selectivity vector and an age-selectivity vector for the same fleet, and how does that actually work out in the model, because your catch-at-age is your selectivity-at-age times a number at-age times the fishing mortality rate, and so, if you

estimated a length-based selectivity, you have -- SS converts that to an age-based selectivity.

Now, if you also are estimating another age-based selectivity, and so you basically have two vectors of age-based selectivity, and how is that put into one selectivity-at-age?

DR. FORRESTAL: I think, in previous models, a lot of people model it just full selectivity for ages, because fishermen aren't selecting the age of the fish, and it's, you know, the size of a fish, and that is -- The model did not fit those very well, and so that is why there are selectivity curves on the ages, and retention is modeled based off of length and not ages, but I think Katie might have further insight on how it actually works within SS.

DR. SIEGFRIED: I don't know how insightful I am about that part, but that's why we didn't want to use the years that had lengths and ages in them, partially because they're usually the same fish we've determined, and so it's entering that data twice, but, as far as I understand, the model uses those two pieces of information, and one is the length converted to age, along with the other age curve, to create, you know, those estimates of numbers-at-age.

I mean, it uses them both simultaneously, and, I mean, I would be interested to talk with you about that offline, but, I mean, it doesn't cause any problems in the other models that we have that estimate both length-based selectivity and age-based selectivity, and so, without looking at the source code, that's what I think is happening, but we can certainly dig into that.

DR. PATTERSON: I don't recall seeing any other models where both a length-based and an age-based selectivity were estimated. I've seen where both the data types are included, so you can estimate a length -- You can have a length-based selectivity and fit to the age data, because it gets converted through the growth function, but to have both length and age selectivity estimated -- I don't understand how it works.

DR. SIEGFRIED: It causes problems if they differ, right, and, if the age-length key that's created in the model differs from the way that the ages are calculated, before they're turned into compositions, it can cause problems. We saw that, a little bit, for scamp, when we were trying to use both.

DR. PATTERSON: So does the age vector, converted from the length selectivity -- Is that averaged with the direct age estimation?

DR. SIEGFRIED: As far as I understand, yes.

DR. PATTERSON: So it's like an average of the two?

DR. SIEGFRIED: They're different years, and so we're okay with that. If they're the same years, we have a problem with that, and that's where the double-counting would happen. It's something that -- Part of the problem that is one of my big frustrations about this assessment is that it's an operational, and there's so much that needed to be fixed.

One of them is all of this age data that was just not included, but it was a TOR that said that we needed to try to include it, and so there is -- I think we could probably have spent another month figuring out more about how these selectivities could have been configured, and so I wish we would have had more time with that. It's possible that we would have just stayed with length-based, because our ages, particularly for recreational, are so sparse, but we didn't delve into more of what the proportion of the influence of the length versus the age selectivity was. Obviously, our retention is just in length, and that's important for our discarding, but, I mean, that's the best I can --

DR. PATTERSON: Did you say that you only estimated -- You estimated age selectivity, but that's only for -- Is it like parsed out by blocks, so that you aren't estimating a length and age selectivity in the same year? I am curious, and maybe we can chat offline and try to look into the code and see how these two selectivity vectors are averaged, because there can only be one selectivity-at-age vector that goes into the numbers-at-age equation.

DR. SIEGFRIED: Yes, but you can take an average of the multiple selectivities, which is what I think SS is doing. It has to be doing that. There's no way it's doing two different things for the same time block.

DR. PATTERSON: Or it's just overriding one.

DR. SIEGFRIED: Well, I don't think that it can override it if it offers the selectivity option, and like this is part of the frustration with SS, and I don't think it can ignore it, if you enter it as a selectivity in that input file, and I don't want to -- I hate discussing something offline that then we don't discuss with the group again, but I believe that that's precisely what has to happen.

DR. PATTERSON: Okay.

DR. SIEGFRIED: I am trying to think of where in the code that would happen, and we can talk about that part offline.

DR. PATTERSON: Okay. Thank you.

DR. FORRESTAL: Moving on with the configuration, the age selectivities that were estimated had loose symmetric data priors, and there was a continuous F method that was used, and this is recommended where catch is known imprecisely, and then it was assumed -- The stock was assumed to be at the unexploited equilibrium level at the start of the time series, as it was in SEDAR 51, and there are catches available before 1945, but they're very small, and it was discussed, at the data workshop for SEDAR 51, that they were negligible, and an unexploited equilibrium level was done, and so there was no initial fishing mortality estimated.

The fishery-dependent indices CVs were scaled to a common mean of 0.2, and this was also done in SEDAR 51, and then I mentioned we modeled the time-varying retention, length retention, to account for changes in the management regulations. We assume that all fish caught before the size limits were retained, and then we estimated the inflection points and width parameters for the first time block for these retention parameters, and then, after the size limit went into place, the commercial was assumed at full retention above the federal size limit, and recreational was assumed at full retention above the Florida waters size limit. Okay, and so are there any more questions on --

CHAIRMAN NANCE: I was going to say that, before we get into the results, any more questions on data and the inputs? Will.

DR. PATTERSON: I am a little bit confused on page 49, Slide 49, and so what's the difference between the two age-ones and then the SEAMAP trawl here?

DR. FORRESTAL: In terms of -- The SEAMAP trawl has length compositions that show that it's not a true recruitment index. Because the length compositions were not used for SEDAR 51, I think the decision was that this could be used as a recruitment index, but I'm not entirely sure about the rationale behind that one.

DR. PATTERSON: So then the age-one index is to the FIM data?

DR. FORRESTAL: Yes.

DR. PATTERSON: You have two listed here for what reason?

DR. FORRESTAL: Two listed? I'm sorry. I'm confused by the question.

DR. PATTERSON: You have two age-ones.

DR. FORRESTAL: That is -- I'm so sorry. That is one of the errors in the slide.

DR. PATTERSON: Sorry. You may have pointed that out, and I missed it.

DR. FORRESTAL: I had two age-ones, and that was a typo that I noticed, and so it should have been charter/headboat, age-zero, age-one, SEAMAP trawl.

CHAIRMAN NANCE: Thank you. Let's go ahead and -- Before we get into the data results, we're going to take a fifteen-minute break, and so we'll come back at 10:20, Eastern Time, and resume the presentation.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: We'll go ahead and reconvene, and we'll start with the model result, which it looks like Slide 51.

DR. FORRESTAL: Okay. Hello, everybody. First, with the assessment model results are the landings, and so these are the fits to the landings for the commercial on the left and then recreational on the right, and the two different columns show the differences between SEDAR 75 and SEDAR 51, and the fits for the commercial landings are quite good, and the SE is very small, and so it's set at 0.05, and so there's not a lot of wiggle room for the model.

The top two fleets are not completely analogous, because the commercial vertical line for SEDAR 51 is the Monroe County fleet, and then the non-Monroe County fleet is the second panel down, and then longline for SEDAR 75, and it's the final panel for SEDAR 51, and so that's a little complicated, when we're trying to compare them directly, but, for recreational, the standard error is fixed at 0.1, and so there is a little bit more flexibility in the model, but, overall, the fits are quite good. There is some difference seen in the recreational shore mode in the late 1980s, and that was also observed in SEDAR 51 for the landing fits.

Looking at the fits to discards, discards are modeled as the total magnitude removed and not the discard fraction, as in SEDAR 51, and so you can see differences in the Y-axis there, but we have

the fits for SEDAR 75 on the left and SEDAR 51 on the right. Overall, the model is underestimating the discards for the commercial vertical line, up until about 2010, and then it's just overestimating them, and then, again, these are very wide -- The confidence values are 0.3, and so this allows the model a lot of variability for fitting these, and then the total discards for commercial longline, this discard is very, very small, and it's almost at zero, for the majority of the time series, and then it ticks up in about 2014, and then the model is underestimating these discards, but it is, I think, probably difficult for the model to truly capture it, given the magnitude of these discards.

Shifting to recreational, we have SEDAR 75 in the top panels and SEDAR 51 in the bottom panels, and, again, 75 is modeling the total magnitude removed, versus the discard fraction.

For the private fleet, the model is generally underestimating the discard level, but it is within the confidence intervals. For the shore mode, the discards do fit a little bit better, with the exception of 1991, where the model greatly overestimates the level of discards observed, and then, for the recreational headboat/charter fleet, the discards are fitting relatively well until about the mid -- To about 2010 or so, and then it underestimates them.

Looking at the overall selectivity, this is a little -- It's messy, because it has all the fleets and surveys included, but I will go into these individually, but this just shows how the different -- The different lengths and ages that are being selected for the fleet, as compared to SEDAR 51.

The fleet retention, the first time block for both of the models are the gray line, and so that goes from 1945 until 1989. The top-two panels are vertical line, or Monroe County vertical line for SEDAR 51, and the model is selecting smaller-sized fish up until the time block, and then the bottom panels are the longline fleet and then the not-Monroe-County vertical line fleet for SEDAR 51. You see smaller fish being retained for the longline in the first time block for SEDAR 75.

Then the next slide is for the fleet retention for the recreational fleets, and, again, private, shore, and the charter/headboats are selecting smaller fish, until the time limit comes into place. I'm sorry. The size limits comes into effect in 1990.

These are the selectivity curves for the commercial fleets, for the commercial lengths, and we have the vertical line, longline, and then nets and traps. There is no retention associated with

nets and traps, as there was no discard data for that, but these all have the double-normal selectivity, and so that is the six parameters. Any parameters that had a parameter CV above one are highlighted in red, and so, for the vertical line, we have the ascending width and then the top logit, and then the longline is also the top logit.

For nets and traps, this selectivity was difficult, and so we had to fix the peak, and so the beginning size of selectivity had to be fixed, because it was -- It was not estimating it well.

For the commercial ages, we have -- This is also double-normal selectivity, and then the CVs -- The parameters with the higher CVs, above one, are the top logit for the vertical line, and then the descending width, and then, for the longline, we have the top logit, the ending logit, and the descending width parameter, with the more uncertain the value.

These are the residuals for the lengths and ages, and so the plot on the left is for the length residuals, and the plot on the right is for the age residuals, and we have the federal size limit, and then the Florida size limit, in the red and teal bar, and then -- I just realize that these are transposed, and so the Florida should be the smaller one, which is the red one, and so that is confusing, visually, and I'm sorry about that.

You also notice that the lengths have -- There are only six years available for lengths when the age data is used, but, overall, the model does appear to be -- If it's a closed circle, and so a gray circle, it means that the observed is greater than the expected, and so then -- This is negative, and so it's less than -- The model is estimating less.

For the commercial longline, these are the residuals, and, again, these colors are transposed, and I think that's going to carry through for all of these slides, and there are some patterns seen with the commercial longline lengths, but the residuals for the ages do appear to have a good -- There is no patterns observed with that.

The commercial nets and traps, this is how the data fits throughout all the years, beginning in 1986, and you see some residuals before the size limit, prior to 1990, and then, once the size limit goes into place, but there are no -- There is no discard data available for this.

Moving on to the recreational lengths, we have private, shore, and then the charter/headboat fleet. Anything with a CV above one is

highlighted, and so all of these have the top logit, which is uncertain, and then you have the retention parameters for the time blocks below. Then the recreational ages, and this is for the private and then the charter and the headboat, and these are the final ages.

Looking at the recreational, the private, fleet closer, again, we have the years removed between -- In the early 1980s, and there are some -- The model is overestimating the -- It's underestimating the smaller ages.

Then these are the fits to the recreational shore mode. If you look at the sample sizes for shore, it is -- They're quite low, and there's not a lot of information on the size composition for this fleet, and it is very -- It's an important component of the gray snapper landings, and so this is just something to keep in mind, moving forward, and so the lack of sample size is observed with the residuals that some years -- With the Dirichlet adjusted, and there are just about twenty-two samples, or thirteen samples, for the lengths, in some of the earlier years.

Then, for the charter and headboat, we have both lengths and ages. The length data comes from the earlier part of the time series, and then the ages are all in the latter part of the time series, from 1991 onwards, and so there is a tradeoff between using length composition with the age composition data, because you do lose years with length, and so you lose -- If you have years with ages, then you lose those years with the length data, because you don't have to avoid double-counting.

However, ages are a very important component of the data, and it was in the TORs to include these, and so the fits to the ages are actually quite good, with the available fleets, and then, with the remaining data for the length, it's also quite reasonable, particularly for the private and the shore mode.

Then, shifting into the fishery-independent data, and so this shows the final selectivity curve for these three fleets, the SEAMAP trawl, the combined video, and then the reef fish visual census. There are some residual patterns seen, particularly with the combined video, and it does look like, in the earlier part of the time series, we see some larger fish, and then, later on this, pattern shifts to smaller fish, and then there's no comparison for this for SEDAR 51.

Looking at how all the surveys and fleets break down between the two models, you have SEDAR 75 in red and then the SEDAR 51 in blue, and age-zeros and age-ones have -- They're either recruitment or

they're fully-selected, age-one-plus. SEAMAP trawl was a recruitment index in SEDAR 51, and so that is that pattern, and then the combined video survey and the reef fish visual survey were mirroring fleets, and so they didn't have an associated selectivity.

The SEDAR 75 vertical line selectivities, compared to the Monroe County and then not Monroe County, and then the commercial nets and traps, and the blue line is for the longline in SEDAR 51. You can definitely see some changes in the selectivity with the recreational private fleet, as with -- The dome has shifted. for the recreational shore fleet, to smaller fish.

All the length composition data in SEDAR 51 was -- We did using Francis reweighting, and they had a cap on the sample size. There was no cap in SEDAR 75, and we used the Dirichlet multinomial, and so -- They used fish, and I used trips, and so it is not quite comparable, in terms of the sample sizes, and so the Dirichlet parameters are the lowest for the nets and trap length, and the reef fish visual surveys, and so the model is essentially putting less emphasis on this data, and then it's the highest for the longline length and ages, and then the shore lengths.

This is just an overview, and I'm going to go into these each individually, but, as I mentioned, the commercial vertical line index was not used for SEDAR 75, due to IFQ issues and how the fleet compositions are, but, overall, you can see how the fits compared between SEDAR 75 and SEDAR 51.

Going into the individual indices for private, the model is not really capturing the dip in the earliest part of the time series, from 1981 to 1986, but it's the time period of highest uncertainty, and those early years are often excluded from other species, MRIP indices for these, but they are included for gray snapper. It is capturing the trend after 2014, but it is missing that dip, again, in about the mid-2010s.

Looking at the shore mode, the index is tracking it relatively well, with the exception of the beginning part of the time series and in the mid-2000s. The fit to the age-one index is not good, and it's just showing a flat line, and so it's not really capturing that uptick with the age-ones, and it is also -- The model does not really capture the combined video index.

Looking at the SEAMAP trawl, it does also appear to be relatively flat, and then the reef fish visual survey does miss the 2011, but it does capture the last time point.

These are the recruitment results, and the data begins in 1981, and so the early recruitment deviations are from 1951 to 1981, and the first figure is the age-zero recruits, and then the middle is the recruitment deviations, and then the stock-recruitment relationship, and the CVs are high for the early rec devs, and then for 1981, 1983, and 1985, and then a couple of years later on in the time series.

Comparing the recruitment between SEDAR 51, and so we have the estimated -- You can see, in this top panel, those are the recruitment deviations, and then for SEDAR 75 in the bottom panel, and there is a large difference seen in the mid-1980s, and there was a large dip in the recruitment devs that was not observed in SEDAR 75.

The estimated Ln(R0) is higher for SEDAR 75, as compared to 51, and then that is reflected in the R0. Steepness is fixed at 0.99, for both models, and then the sigmaR also does differ between.

These figures have the spawning stock biomass and then the total biomass for SEDAR 75, and then the numbers-at-age compared between the two models, and the red line shows the average age seen, and so the average is three to five years, and that doesn't really change between the two models, but there's a lot less variability in the 1980s, when the data kicks in in the model.

Then, looking at the fishing mortality, this is the overall trend, and then broken down by fleets, and the overall pattern is the same between SEDAR 75 and 51, and the mortality is dominated by the recreational private fleet, followed by the shore mode, particularly in the ending years of the time series, from 2015 onwards, and then followed by recreational headboat and charter boat.

Looking at the two base models, and so SEDAR 51 is in blue, and SEDAR 751 is in red, and there is a difference between the spawning stock biomass and then in the total biomass, and so the model does appear to be estimating more younger fish than was observed in SEDAR 51, and that's all I have for the results, and I think this would be a good time to ask questions.

CHAIRMAN NANCE: Any discussion on the results section? Will, please.

DR. PATTERSON: Francesca, can you go to Slide 54, please? I just wanted to point out, in this slide, at the bottom-middle panel, the model didn't believe a proportion of 0.9 for shore mode discards either, Jim. Then I have a question on 56.

CHAIRMAN NANCE: Ryan, to that point?

MR. RINDONE: Well, there's a difference here in what's being presented though between SEDAR 51 and SEDAR 75, as far as what the model is fitting to. In the bottom-middle panel there, that's the discard fraction for the recreational shore mode from SEDAR 51, which the model underfit considerably, and the top-middle panel, which would be, I guess, the comparison that probably shouldn't be drawn, is the total number of discards, and so the model is fit to the total number of discards and not the discard fraction.

Then it's discard fraction for everything that was in SEDAR 51, and, for those of you that remember that review, we had a lot of discussion, especially about the commercial side, for the discard fractions that were estimated for SEDAR 51, and the fraction of those didn't seem reasonable for the commercial side, but I think that's pretty well resolved for this model. The recreational discard fraction, we talked a little bit about that today, and there were good research recommendations that came out of that, I think.

CHAIRMAN NANCE: Thank you, Ryan. Will.

DR. PATTERSON: Then 56, please. Between SEDAR 51 and 75, for both of these commercial fleets, for the early time period, there's a pretty significant change in the retention, and is that imposed, or is that estimated? What's going on there?

DR. FORRESTAL: For the early time period, these are estimated, and this, I think, was one of the comments in the review, that the retention seemed counterintuitive, that they were not -- That it was flipped from what you would expect, and so this was definitely, I think, a point during the review workshop with stakeholders, that it did not seem right that they were catching smaller fish after the size limit went into effect.

DR. PATTERSON: That they're retaining smaller fish.

DR. FORRESTAL: Yes.

DR. PATTERSON: So was there any kind of a resolution to that discussion?

DR. FORRESTAL: I think it was in the TORs to examine the retention, and then we -- None of the retention parameters for the first time block, if I remember correctly, are fixed, and they're all estimated, and so this is just what the model is estimating with

the data.

DR. PATTERSON: Okay. On Slide 70, and so on the bottom-left, where you have the visual, the reef fish survey, and this declining selectivity with length, what drives that? You know, I'm trying to think like of an ecological and behavioral process, and this is fisheries-independent, and like what would be driving a decline in selectivity for gray snapper on the video gear?

DR. FORRESTAL: This is the reef fish visual census, and so it's just in the Keys, and I think it's structure, and so maybe the largest fish aren't around those reefs.

DR. PATTERSON: That it's site-attached, and is that the idea?

DR. FORRESTAL: Yes, I think so.

DR. PATTERSON: Okay. Then, lastly, on Slide 76 --

DR. BARBIERI: If I may jump in here, real quickly, just one other note on the reef fish -- I mean, the RVC, the visual census, is the depth range that that survey is conducted, right, and, I mean, it doesn't cover all the depth range of the reef tract, really, and it's just the inner, and not the outer, reefs, and so that's why that selectivity would be impacted.

DR. FORRESTAL: That's a good clarification. Thank you.

DR. PATTERSON: Thanks, Luiz. Here, I was a little confused, because the recruitment deviations from SEDAR 75 are higher, sigmaR is estimated to be lower.

DR. FORRESTAL: I think sigmaR is higher in SEDAR 51, and there's a lot more -- That's reflected in the variability, mostly in the 1980s, I think.

DR. PATTERSON: Okay. I see, and so across the time series.

DR. FORRESTAL: Yes.

DR. PATTERSON: Not just within years.

DR. FORRESTAL: Yes.

DR. PATTERSON: All right. That makes sense. Thanks.

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

MR. BLANCHET: Thank you, Mr. Chairman. There were several graphics in there where you were comparing the residuals of the ages and the lengths, both on the commercial and the recreational side, and so, if you had ages, you did not consider the lengths in those years for that particular fishery, and my question is was there any comparison of the length structure compared to the age -- Compared to the lengths of aged fish? In other words, you have -- For a given year, where you have both lengths and ages, you dropped the lengths, but did you compare the length structure of the aged, versus the non-aged, fish, or would it be worth going back and trying to age those un-aged fish, from an annual age-length key, of the aged fish?

DR. FORRESTAL: I think I'm going to pass that one to Katie.

DR. SIEGFRIED: Well, that's a great point, Harry. When we were looking at these data, and as we've been looking at all of our data sources for all of our assessments, to better understand if we have a length and an age for a fish, we realized that it's actually pretty hard to find those paired data, and then it's especially hard, with our workload, to go back and age the data, or the otoliths for which we have lengths, and so I think that's an ideal situation, and we would like to do that, but, right now, we can't.

MR. BLANCHET: I was not asking that you go back and do that. I was just asking if there was any comparison between the aged and the unaged data, to see whether the age information was representative of the total lengths that were captured for that same year, or whether there should be some consideration of evaluation of possible ways to adjust that, and that's all.

DR. SIEGFRIED: I see. Sorry about that. We have not, for this species, gone back to look at how the age data were pulled from each length bin, and I think that would be a good thing to do, as time permits, for each species, and we were not able to do that here. I think we're going to have to do that for red snapper, but, no, we didn't do that, Harry.

MR. BLANCHET: Okay. That's all I had. Thank you.

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

DR. SIEGFRIED: Sorry. The other thing I wanted to mention is, when we're pulling in the age data, which are always fewer than the length data, we think about the representativeness of them a lot, but we haven't looked at the representativeness within each length bin. Right now, in the Southeast, our first cut is just

trying to see if it's representative of the fleet, which oftentimes is a challenge, but I do think that that is something that we should continue later.

CHAIRMAN NANCE: Thank you. Any other questions from the SSC? Doug, please.

MR. GREGORY: Well, I took my hand down. I will wait until we get to the sensitivity part of the analysis, and I had some questions there.

CHAIRMAN NANCE: Okay. Thank you, Doug. Any other questions on this part, on the results? Okay, Francesca. Let's go ahead and move on.

DR. FORRESTAL: All right, and so now I'm going to go into diagnostics. This slide has the results of the jitter analysis and then the profile that was run on the lnR0 parameter, and the jitter didn't have -- There were no runs that had a lower negative loglikelihood than the base, and so the figure has 100 jitter runs that the starting parameters were changed by 10 percent, and then the orange line is the base model run, or is the base model negative loglikelihood, and so there were some that were close, but nothing that was lower than the base model.

The likelihood profile for R0 is on the right, and so we have the overall profile run and then the zoomed-in one, and so we can look at the change in loglikelihood on the Y-axis, and that's how that differs. The total loglikelihood is in black, and then where it appears to be pulling up that profile is coming from the length data, and I am trying to dig into this further, to parse this out, but, if I had to guess, I think it might be the nets and traps fleet, because that has just been a little unstable, and so I think, across the different parameters that is R0, that is what is causing that pattern.

Shifting into retrospective bias, we have the spawning biomass in the top panels, along with the entire time series, and then it's zoomed-in on the right, and then the fishing mortality is on the bottom, and this is where the data is subsequently peeled back by a single year, and so the base model is the one in blue, the reference run, and the retrospective bias falls within the acceptable threshold limits, and there are no directional retrospective patterns observed, and so some years are above the base model, the reference model, and some are below, with the spawning biomass particularly.

We did a runs test on all of the data inputs, and this looks at if

there are any non-random patterns in residuals, and there are some. It does give a very nice graphic of where the data is showing non-random patterns, and so, because these are very small text on it, the length data, the shore length and then the combined video lengths, are showing non-random patterns, and then, also, in the recreational private lengths, you do see some years that are outliers there.

Then, for the indices, the age-one had some non-random patterns in it, and you can even see that looking at the residuals, and there does appear to be some cyclical nature to them, and then, for the age data, it is the charter and headboat.

This are the joint residual plots, and so this assesses the goodness of model fit, and so it identifies any potentially conflicting time series or if there's any autocorrelation in the residual patterns. A root mean square error above 30 percent is undesirable, and we have that with the indices. The thick, dark line is the smoothed trend, and so you can kind of see the overall pattern with the ages, and then, with the lengths, there's a pattern at the beginning and the end of the time series. Then the report also has the individual RMSE values for these, so you can see where the greatest conflicts are coming in.

Several sensitivities were run, and I'm just going to be presenting the sensitivity to natural mortality, as some of the sensitivities didn't have good convergence, but, for the natural mortality one, we have a pattern that is to be expected in recent years, and so you have the base natural mortality in red. Sorry. The base natural mortality is in blue, and then the high natural mortality vector is red, and the low is in green. The low natural mortality model run did not converge, and so the model does not support -- The data does not really seem to be supporting that lower M value. That is what I have for the diagnostics section.

CHAIRMAN NANCE: Okay. Thank you. Doug, did you have a question on this one?

MR. GREGORY: Yes. Thank you, Mr. Chair. In reading the report, it mentioned that some sensitivity runs were made, but not included in the report, because they weren't major, and my concern here is not a major concern either, and I don't think it would affect the assessment, but it goes back to size at maturity.

In the topical working group, we were first presented with the idea of using functional size at maturity, instead of the physiological, and we requested that a sensitivity run be made. If it hasn't been done, that might be okay, because it's only like

a ten-millimeter difference in the size, and it was told to us that the same approach was being used with red snapper.

My concern is that, historically, size at maturities are estimated based on the physiological evidence and not the functional, and, even then, the estimates are sensitive to where you take the sample, and when you take the sample, whether you're targeting the reproductive season or not, and so it could be very sensitive to the functional versus physiological.

Now, recently, I ran across a paper, out of Mississippi, that looked at this among a number of different species, and, in some species, the size at maturity was the same between the two criteria, and, for other species, it was not the same, and, invariably, when it's not the same, the functional maturity shows a larger size limit.

Given that, I would be more comfortable if we had a what you might call best practices consensus paper, among the reproductive biologists in the Gulf of Mexico, that concurred that the functional maturity was better than physiological maturity, or more appropriate, more accurate.

Until we have some kind of consensus like that, I am concerned that the assessments are automatically doing that, because it doesn't include a bias in the assessment. If the sensitivity run was done, it would be good to hear about it. Otherwise, going forward, I would like to see more thought put into this, rather than just jumping on that bandwagon. Thank you.

DR. FORRESTAL: Thank you. Unfortunately, we ran out of time on running that sensitivity analysis, but I do agree that it would be very nice to have consensus on the best practice, moving forward, just for clarity in modeling, and, also, the sensitivity analysis could be done during this week, if the panel would like.

CHAIRMAN NANCE: Yes. Luiz, please.

DR. BARBIERI: To Doug's point, Doug, just to clarify, the best practices study, or development of those criteria between the two, is in development right now, and so there are people, within the Center, actually working with a variety of other folks and trying to address, right now, and trying to put together something that would bring those criteria into development of best practices.

Regarding -- I don't disagree with you, and your points, I thought, were spot-on, because I was also thinking about that, but, when I looked at the estimates between the functional and the

physiological, the difference was so small that I think it would be inconsequential, in this case.

CHAIRMAN NANCE: Yes, but I do think that having a routine thing would be good though, yes.

MR. GREGORY: I don't think that it will dramatically, or significantly, affect this assessment, but it's just the principle, the concept, and it was -- The people in Mississippi should be included in this best practices, because they've done quite a bit of work on that, and I think it was Nancy Peterson-Brown and one of her students, or a colleague.

CHAIRMAN NANCE: Thank you. Katie.

DR. SIEGFRIED: Thanks, Doug, for that point. One thing that I think is important, when developing that best practice, is it's not so much whether it's a huge difference in the model, but it's also how reproduction is being modeled in the assessment, whether it's spawning stock biomass or whether it's fecundity, and so I think that it can make a bigger difference whether you use functional or physiological maturity, and this is what we discussed with Sue and her group with red snapper.

If you're using fecundity, because it ripples through all of those components, you know, starting with maturity, you know, proportion female batch fecundity, or proportion mature batch fecundity, all of those, you know, spawning frequency, that all -- All that uncertainty cascades through to the estimate of fecundity, but not as much with SSB. That's just something for that group that is putting together those best practices.

CHAIRMAN NANCE: Thank you.

MR. GREGORY: Yes, thank you.

CHAIRMAN NANCE: Any other -- Doug, thanks for bringing that up. Any other questions as part of this? Okay. Let's go ahead and move on.

DR. FORRESTAL: Okay, and so, next up, we have the benchmarks, stock status, and projections. These are the terms of reference that we used to set the benchmarks and for the projections, and so I'll just go into the actual details of how these were applied.

For the projection settings, we have a relative F, which is the average relative apical fishing mortality for the last three years of the model, and so 2018, 2019, and 2020. Selectivity is based

off of the final year of the model, which is the 2020, and this is the same for retention, and that includes that size limit block.

The recruitment is a Beverton-Holt stock-recruitment relationship, and those use the estimated parameters, and then the interim landings -- We had the use the three-year average of 2021, 2022, and 2023, as we don't have the interim landings available for 2021.

CHAIRMAN NANCE: For 2021, what was happening there?

DR. SIEGFRIED: We just have a backlog of data provision at this point, and so it's coming, but it's not ready yet.

CHAIRMAN NANCE: Okay.

DR. FORRESTAL: So these are the parameter values that were used to develop the benchmarks and the reference points. Steepness is fixed at 0.99, and we have an R0 of 23,000 fish, in thousands, and then generation time, spawning stock biomass is at unfished, and then we have the mortality rate criteria. We used -- Because MSY is not estimated, we have the FMSY proxy of SPR 30 percent, and then the fishing optimum yield is 0.75 times the directed F at the FMSY proxy. F current is the geometric mean of the last three years of the assessment, and then the F current ratio to MFMT is 0.659.

Going into the biomass criteria, the SSB MSY proxy is the equilibrium SSB at a fishing mortality of 30 percent SPR, and then MSST is defined as 0.5 of that SSB. The SSB in 2020 is 10,000 fish, and then the current stock -- The SSB ratio, or SSB current to SSB FMSY proxy, is above one, and so --

DR. SIEGFRIED: That's metric tons.

DR. FORRESTAL: Thank you. Metric tons, and then the SSB ratio, the F current to SSB virgin, is 0.48. Looking at this --

CHAIRMAN NANCE: John, you had a question?

DR. JOHN FROESCHKE: Yes, and, actually, I had two questions. One, I guess I'm still confused about the not having the 2021 landings data available, at least preliminary or something, and we, obviously, used them for quota monitoring, to see if there was an ACL overage and all that stuff, and so it just seemed like there should be a number that we could use that was better than -- The average just seems highly problematic to me, if something else can be used, given that that's pretty influential in the projections.

Then the other question, on just that previous slide, and maybe I missed it, but all the metrics were at SPR 30, and this one is at SPR 26, and so I'm just curious about that.

DR. FORRESTAL: Let me check the TORs.

DR. SIEGFRIED: As far as the data availability, I mean, our final numbers aren't ready. If you want a different number for that interim, for those interim landings, that's fine, but, when we requested it from our data group, and, when we've gone through the schedule, it just wasn't a high-priority item at this point, compared to all of the other data requests, and so we can look at the numbers you have for quota monitoring, but they wouldn't be the exact same numbers that normally are provided for SEDAR, and so we approximated with the average, but we can certainly re-run them, this week, and give you new numbers, new MSRA tables, and new projections. That's not a problem.

I thought that we checked carefully about F 30 versus -- Also what P* was, because we don't have the P* projections, because there will be some discussion about the control rule at this -- During this session, but we can also make that modification pretty easily.

DR. FROESCHKE: I'm pretty sure we set the SPR MSY proxy, in Amendment 51, based off SEDAR 51, and I can double-check that, and, as far as the landings, I mean, I don't necessarily have a strong preference, but it just seems like we must have that in some of our operational -- Because we do monitor for overages and that other stuff, and so just -- It would seem better, and I don't have the data at my fingers, and so I can't give you a different number, but it seems like it must exist.

DR. SIEGFRIED: We're just having a lot of trouble with our SEDAR schedule and getting, again, data provisions squeezed in at the end of each different assessment to add a new year of data on, and it's something that we need to talk about during a Steering Committee meeting too, but that's part of the problem, is the prioritization of requests and then when the people are available to produce those estimates.

CHAIRMAN NANCE: Thank you. Go ahead, Francesca.

DR. FORRESTAL: We will double-check that, but, looking at the stock status, the results of this model show that gray snapper is not overfished, nor is it undergoing overfishing, and so you see the progression, over the time series, for the relationship between the F to FSPR 30, and then the spawning stock biomass is on the X-axis.

Then, on the figures to the right, these are the projections, and they do go out 100 years, and so the main area to look at is right here, but we ran it for 100 years, to get the reference points inputted. Then, moving into the current projections for the overfishing limit, and then the acceptable biological catch, the OFL is in red, and then the ABC is in green, and that is defined as -- As of now, it's 0.75 times fishing mortality at SPR 30 percent. These are in pounds gutted weight.

CHAIRMAN NANCE: Thank you. Katie.

DR. SIEGFRIED: Just a question about the F 26, and is that because of red snapper? Was that analysis done for gray snapper last time?

CHAIRMAN NANCE: John, I think that question was to you.

DR. SIEGFRIED: We can have Tom answer if you want instead, John.

DR. FROESCHKE: Okay. One more time. I'm ready.

DR. SIEGFRIED: No problem. Was the 26 percent, the F 26 percent SPR, was that -- That was for red snapper, and I remember the analysis, and I know that you're saying it's for gray snapper, but was it chosen for gray snapper because of the analysis done for red snapper? Can you point me to --

DR. FROESCHKE: So, yes, and I'll try, and I think the genesis of the discussion of the 26 percent for gray snapper was based on that global -- There was a global MSY analysis, at one point, that was done for both -- Originally, it was for red snapper. When we were reviewing SEDAR 51, a similar request was made to do that, and I think that analysis was completed at some point during that, and the SSC recommended an SPR of 26 percent for gray snapper. That was subsequently adopted in Amendment 51, along with the other status determination criteria.

DR. SIEGFRIED: Okay, and so there should be, in all of the SSC documentation for SEDAR 51 -- There's an analysis that says that it just happens to be the same as for red snapper? I will look back into it, but I just wanted to make sure.

DR. FROESCHKE: Yes, and I believe there was a global MSY done for gray snapper, and I don't recall -- It would have been around that timeframe, but the actual MSY and things is documented in Reef Fish Amendment 51, and that states the SPR 26 is the MSY proxy.

DR. SIEGFRIED: Thank you.

CHAIRMAN NANCE: Okay. Questions or discussion on the model itself? Doug, please.

MR. GREGORY: Thank you, Mr. Chair. I have a similar question, or concern, that I raised at an earlier stock assessment, and it's getting more confusing, to me, and it seems like we don't have consistency from one assessment to the next, but, here, we're using the Beverton-Holt stock-recruitment curve, and you look at the graph, and it looks like there is no relationship between spawning stock and recruitment, and the model is assuming a steepness of 0.99, which basically says the same thing, that there is no relationship between stock and recruitment, yet we're using the Beverton-Holt projection for projections, and not average recruitment, like we've used in the past for other species.

Then there's the question that, if you have a Beverton-Holt model, why are you using percent SPR and not going straight to MSY, and they're two different issues, and so let's forget the second part that I said about MSY, because we hashed that out at the last meeting, and Katie said that that's being looked into for the future, but what's the role of the Beverton-Holt, when we have a steepness of 0.99, and using Beverton-Holt for projections, instead of average recruitment, and that's the part that I would like to address. Thank you.

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

DR. SIEGFRIED: Yes, we are looking into that still, Doug, and I see your point, and we can either take recent average estimated recruitment or, in a way, it is taking average recruitment, but it's just from, you know, this flat stock-recruit relationship, and those are modifications that we can make that we fully expected to discuss those specs of the projections when we got to the meeting, and so, again, because we didn't have a panel, and we didn't ask everybody how we should put all the specs together before we got here, we did it in a similar way to previous assessments, but there are these differences, like the fixed steepness at 0.99, the issue with the proxy, and then, if you want to look --

We've talked a lot about recruitment stanzas too, and, I mean, I suppose you could look at the recruitment devs and have some thoughts about whether it's high or low, and how much of that time period of estimated recruitment you would like to assume.

If we're assuming average recruitment over the entire timeframe, then it would be a lot flatter, or lower, I should say, than if

you assume the last ten years, and so I think that should be, you know, a larger discussion that we have here.

MR. GREGORY: Thank you. I agree, and there needs to be, I think, some consistency, so that we're not tempted to choose one approach over the other, based on what the data looks like, the recruitment estimates look like. Thank you.

CHAIRMAN NANCE: Yes. Any discussion on the model itself? Luiz.

DR. BARBIERI: Thank you, Mr. Chairman, and, to Doug's point, and Katie's comment there, I think, you know, you're waiting on some kind of recommendation, right, on these very points, on how to basically develop the criteria, right, for the projections, and I tend to agree with Doug here that, yes, going with average recruitment would be best, given the outcome of the stock-recruitment relationship and that we are using a proxy for MSY.

I mean, other than that, I mean, I think this is just a matter of deciding how to structure, I guess, that average recent recruitment, but we have discussed this in the past, several times, and so we have different ways to do this that we could, you know, look into.

CHAIRMAN NANCE: Katie.

DR. SIEGFRIED: Just to state it again, if you have a stock-recruit curve, or it's not really a curve, but a line that has a steepness of 0.99, when we pull the recruitment from that, that is basically average recruitment, and so it's not -- What I was asking, and maybe I'm overcomplicating it, is if Doug was asking about the average estimated recruitment, which probably, based on what you see there, and the fact that SS requires devs to average out to zero, they might be almost the same, but we can calculate that, if it's of interest, but that's why we started with the Beverton-Holt curve, even though it's a line, is because it's the average recruitment.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Well, and thank you for that, Katie, because I was going to actually bring that up before, right, but I guess, not keeping up with the latest-and-greatest developments in SS, you know, it's difficult to know, with all the updates and the changes in the way -- I mean, way back when, this is the way it would turn out, and you would set, you know, steepness to 0.99, and you end up producing a vector of recruitment that is equivalent to the mean.

If that's still the case, you know, this is fine, and I think Doug's point is more the nomenclature, right, in that table, that basically says, more explicitly, that average recruitment is being used. How it's being derived I guess is another discussion, right, but I think that helps clarify the issue, in terms of the projections that we have in front of us.

CHAIRMAN NANCE: As far as -- Go ahead.

MR. GREGORY: I see to remember, Luiz, in the back of my mind, discussions about whether to use the Beverton-Holt curve or some average of estimated recruitment, in the past, and I don't know what assessment, what species, and I know it has varied, but it would be nice if we could come down, even as just an SSC, on a consistent way of interpreting this and using these in projections.

I think, in one instance, we've used the last ten years of recruitment estimates, and, in another instance, we've used the average of the entire team series. I mean, this is just getting to be all over the place, in my mind, and so I'm just looking for some consistent thread. Thank you. I think it's more than nomenclature.

CHAIRMAN NANCE: I think that's a good point, Doug. From the standpoint of the model though, we need to have -- Is the model -- Without looking at the projections and so forth, is the model something we feel that we can use to be able to manage the stock and move forward with how we want to do the projections? Will.

DR. PATTERSON: You know, as I look at this, I'm still trying to wrap my brain around what signal is the model picking up that is increasing estimates of recent recruitment, and where does it cause a misfit in other data sources, and so, you know, it looks like the CPU index for the shore is really driving all of that, but then you don't see, and I'm looking at Slide 72 -- Then, oddly, you don't actually see a good fit to the FWRI age-one time series, and so there's a disconnect there.

For the other fishery-independent time series, the model is predicting a flatter line, in many cases, than what the data are actually showing, and so I don't understand. I mean, it seems apparent that the shore CPUE is really driving this, and the model fits it pretty closely, but it's not picking up on the signal from other indices that it seems like it would, and the other thing is that, when you look at the age comps, the residuals, you know, for the younger age classes and those compositions, especially on the recreational side, the model appears to be overestimating what the

data show.

CHAIRMAN NANCE: Was that happening also with 51?

DR. FORRESTAL: It's unfortunate that there's such -- There aren't any -- There is not sufficient ages for the recreational shore fleet, and the available sample sizes are so low, and so it could -- While it's fitting the index quite well, I think it's just missing some information for this large fleet.

CHAIRMAN NANCE: Okay. Katie.

DR. SIEGFRIED: When we included the age compositions, we did get more information about cohorts, which is one of the things that I think that is informing some of what we see in the uptick in the last ten years, but also the fact that all of the indices, except for the age-one-plus, are going up, it looks like, and so it seems like the model, in order to produce enough fish to match that trend, are going to create the recruits that are needed to support that level of landings.

Then, also, we have new discard information, which I was just looking at, and I don't want to make a statement about that yet, until I understand better what my point is, but, as far as the cohorts and the last ten years of all the indices increasing, I could see why, you know, we're getting an increasing recruitment trend at the end of the time series.

It doesn't fit the video survey as well, or the -- Is it the trawl as well, in the terminal year, but it is such a big increase that I'm not sure that the population could actually increase the much in a terminal year. Also, if we had more time, the combined video survey -- For other species, we've looked at a limited spatial scale, because 2020 had a lower sampling, and so I'm not entirely sure that those big increases for SEAMAP, or the combined video survey, are something we should be chasing. Just some ideas.

CHAIRMAN NANCE: Thank you, Katie. Harry.

MR. BLANCHET: Thank you, Mr. Chairman. To the point of whether -- When you use the last ten years, or we use average recruitment over a longer time series, the times when we have used the last ten years has typically been times when that last ten years of recruitment has been below the long-term, and we're looking at an overfished situation, and so that we would end up being more optimistic, in terms of our projections, if we were to use the long-term, rather than the last ten years, or we have some information that would explain why we have changed recruitment.

We don't have such an explanation, in terms of why we are seeing more gray snapper in recent years, and we don't know whether that is one of these ten or fifteen or twenty-year oceanographic cycles, or whether it's just random chance, and so I don't feel as comfortable about recommending using a shorter time average than the long time series in this case, because we do not have any explanation that could explain why we have more critters out there now, and we do not have a situation where we need to be more conservative than the long-term estimate of recruitment would provide us, and so that was -- You were asking for an explanation of why we would -- Doug maybe was asking for an explanation of why we would use short-term versus long-term recruitment, and that was my perception of the situation. Thank you.

CHAIRMAN NANCE: Thank you, Harry. Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Harry, I agree with your point there for this one, and I think this is exactly what we should be discussing, right, and so how we're going to be having to develop ways to input recruitment here for the projections, and that's the type of discussion that we need to have, and I'm in agreement with using the long-term R, given all the issues that Doug brought up, but I have another question for Katie and Francesca about, you know, the reference points and the yield streams of OFL and ABC that we have in front of us right now.

I mean, obviously, if we're going to use a reference point of 26 percent SPR, the stock will, you know, continue not being overfished and not undergoing overfishing, even when you use the new -- I mean, the 26 percent, versus the 30, but it's just not as easy, clean, to provide -- I had a motion ready here that, based on the reference points that we have in front of us, we consider this to be consistent with BSIA and everything else that we usually put in our motions.

I am just wondering, you know, when you think, Katie and Francesca, that you could generate, you know, new outputs, using the difference reference points, in terms of yield streams, for us to have in front of us to make those OFL and ABC recommendations.

DR. FORRESTAL: It would be possible to do that overnight, I think, and have the results for you to look at this week.

CHAIRMAN NANCE: Okay. Roy, to that point?

DR. CRABTREE: Yes, and, just so I'm clear, I mean, 26 percent is the reference point on the books now?

MR. RINDONE: Yes, and I think what happened was, when we wrote the terms of reference, and you guys reviewed them, it was still -- The default for reef fish was still 30 percent SPR, and so SEDAR 51 was completed in 2018, and Amendment 51 went into effect on December 17, 2020, and, by that point, we would have already submitted the terms of reference.

DR. CRABTREE: Yes, and I think I remember the discussion, at a council meeting, which had to do with 26 percent is the reference point for red snapper, and so are we saying that we think mangrove, gray, snapper is less productive than red snapper, and we need to be at 30, and people didn't buy-into that, and so the council put it at 26 percent.

Just remind us, and so, if we recommend 30 percent, does that mean that it has to go back to the council for a plan amendment, or there's something in there that allows them to accept -- I don't remember how that worked.

MR. RINDONE: I know the answer to this, but John is so excited to share his knowledge that I will let Dr. Froeschke take it.

CHAIRMAN NANCE: Go ahead, John.

DR. CRABTREE: I've heard him share it many times, but I forget the --

DR. FROESCHKE: My favorite story. Based on Reef Fish Amendment 48, the SSC could make a recommendation for whatever SPR they felt like they wanted to, and the council, if they chose to do that, they could just note that in some other plan amendment and then go forward. If the SSC wants to provide ABCs and OFLs across a range of SPR levels, then we're going to have to do an amendment.

CHAIRMAN NANCE: Thank you. Will.

DR. PATTERSON: So we're talking about projections, and we have been for a little while, but we haven't actually passed a motion about the actual assessment, and I'm still trying to figure out this recruitment issue, and maybe everybody else already figured it out and feel content with what they've figured out, but, in looking at Slide 75, in the top-right there -- Well, actually, all of these trends, recent recruitment is being estimated to be twice any historical value, and, even if you look in the data-rich period, you know, the recent trend is upward.

That's a pretty substantial increase, and the estimates of stock

productivity don't seem to be entirely related to the recalibration, and so I'm still trying to kind of wrap my mind around what's going on here. Maybe it is all shore, and young fish, and that's what is driving this, but we're getting a very different perception of stock productivity in the recent years than historically.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: Thanks. Francesca, can you go back to the proportional landings from the recreational fleets? I think it's probably in the earlier half of the presentation. I wish we had a way to look at the plot on the right side against some of the recruitment information, just kind of thinking about what Will was saying and how much of this is actually being driven by the shore mode and the degree to which any of that is really showing up here, and, also, bearing in mind that we would expect, you know, an increasing amount of recreational effort over time, and so proportion alone wouldn't necessarily explain everything, but, you know, if there's more fishing effort happening nearshore, and there's more of these small fish that are being landed, and observed, what kind of relationship that has with thoughts on recruitment.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: To that point, and, Katie and Francesca, correct me if I'm wrong here, but, you know, the model is probably also seeing, right, that the magnitude of discards seems to be increasing over time, recently, and that is sending some signal to the recruitment as well, right?

DR. FORRESTAL: I think so, and then I also think where the model is getting more small fish is in the fishery-independent length compositions, because they were not included in the previous model, and they are overall -- Let me see if I can find that slide.

We have this information here, and so the majority of them are in the smaller size classes, and then, if you look at them in terms of what's available in the later years, we are getting more small fish in the data from these surveys, which began in about 2010, or a little bit earlier.

CHAIRMAN NANCE: Thank you. Roy.

DR. CRABTREE: Well, so, if we're looking at the changes in recruitment, and they seem to be higher in the last decade or so, which it does seem to show, I mean, you could argue the stock has

become more productive in recent years, but I wonder if it's just because our estimates of stock productivity, in the older sequences, are much poorer, and, you know, the magnitude of the catches is, to some extent, scaling our perception of productivity.

I think I saw, in here, that this fishery is predominantly recreational landings, and always has been, and didn't we fix the CVs, on the recreational catches, at 0.1, or some low level, and so we know the older time series, recreationally -- The variances in them were much higher than they are now, and, yet, we're losing that, and so probably these old estimates of productivity, from early in the cycle time series, are much poorer than they are now, and I just wonder if that's kind of distorting our perspectives of how stock productivity may have changed over time, because we've removed that -- We're masking some of the variability of an important signal, and does that make any sense?

DR. SIEGFRIED: Yes, I think -- If you go to Slide 76 again, it is all in the way we show it, and so not only what Roy said, but also what Francesca said. If you look at the top-right plot, and you look at the scale, you match the scale to negative-one to one, which is what the bottom plot is, and the pattern, the residual, or the deviations on the top, are actually all positive after 2010 as well, and so the previous model didn't say that it was not productive, but it's that we've just continued on with this, you know, positive deviation trend that we had in the last model, and we've added on all of the independent time series composition, which happens to capture those smaller fish better than some of our fishery-dependent composition data.

Shore is really key here as well, because we're not mirroring that selectivity to private. We have its own selectivity function in this model, and so I think combining all those, as well as the just fundamental magnitude of those landings, has gone up. It's not nine-times, like we thought shore mode would, but is two to three-times, and all of that is scaled, the model and then the recruitment up.

CHAIRMAN NANCE: Thank you. Luiz.

DR. BARBIERI: Then, with all of that, which I agree with, you know, this brings us back to Harry's previous point that, you know, given the uncertainty, right, that exists, because there's multiple factors that we cannot wrap our arms around, right, influencing how this recruitment time series is panning out the way it is, you know, using the full time series, right, at least of the observed, would be wiser, because then we account for it.

CHAIRMAN NANCE: Roy, to that point, please?

DR. CRABTREE: It might be wiser, in the sense that it's more conservative, and I grant you that, but, if you ask me what's the likely productivity of the stock, looking ahead for the next five or six years, I would say, well, it's probably going to be something close to what it's been for the last ten to twelve years, and more likely to resemble that than it is to resemble the long time series, and we're setting an ABC that usually the council would put in place for three to five years, and so I'm not sure the more recent time series of ten to fifteen years might not be actually a better guide to productivity than -- I guess you're talking about using the full series, but you're only talking about in the data-rich years, which goes back to, what, 1980 something, and so I think that's how I'm thinking about it, is using that entire time series.

It's more conservative, but that's really the council's call. What is our best guide to what we think productivity would be, over the next three to five years, and I'm not sure that a more recent, albeit shorter, time series might not be a better guide to that.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Right, and I don't disagree with that, other than, you know, we are trying to untangle, right, what the uncertainties are and what may be differences in how the data are reported now, or the estimates are being produced, how that is influencing the estimates of recruitment, versus these true pulses of population productivity, and so that's the question right now.

That signal in the data is coming from -- There's a biological process, or there may be some artifacts of data issues there that are generating that, and so this is why I thought that the other one might average over time, right, in a way that might be helpful, but I can see your point.

CHAIRMAN NANCE: Doug.

MR. GREGORY: Thank you. This is not something we can do this week, or for this assessment, but I would like to see some regional estimates of catches over time, and I think Florida, being the peninsula that it is, and it stretches from the southern Gulf to the northern Gulf, and these Florida estimates, regionally, over time, could be some -- They could give us some insight as to what's happening with the population.

Now, I know that -- The biologists from the other states can be

looking at their data, and are they seeing more gray snapper in the last five years or so? I mean, I think my impression is, anecdotally, that the range is expanding, the population is expanding, and we know the same thing is happening say with snook in Florida, and we've got snook up in the Cedar Key area, where they didn't used to be abundant.

In the future, I think we need to start looking at regional and temporal changes, and not just Gulf-wide, to get an idea of the dynamics of what's going on, because climate change is having an effect.

Most dramatically, we saw that, years ago, with king mackerel, where the Gulf king mackerel stock migratory pattern changed dramatically, to where we changed the boundaries of the management, and migratory fish are going to be the first ones we see, but these other fish are going to make changes as well, and so I think we need to start trying to figure that one out.

I'm not surprised that productivity could be higher, but I just don't know, like Luiz said, what's driving it, but it could be real, and we probably have some data to give us some insight as to if the abundance of gray snapper has been increasing in other parts of the Gulf of Mexico, rather than just south Florida. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Harry.

MR. BLANCHET: Thank you, Mr. Chair. To Doug's point, we have always had an abundance of gray snapper off the coast of Louisiana, at least at oil rigs and in very specific shore locations, and my point, in terms of talking about this uncertainty, is one of the issues that has been brought up earlier, especially by Trevor, but not in relation to this, is that 90 percent of the shore mode is being released, and so we had, earlier, that graphic of the proportion of the harvest that was coming from shore, and that's the harvest.

That stock assessment is seeing, also, that large number of released fish in that shore mode in the most recent few years, and so that may have some influence as well, in terms of looking at stock productivity, and so any questions that you have regarding the accuracy of that 90 percent release will have some implications, in terms of what you think of in terms of productivity of the stock here.

CHAIRMAN NANCE: Thank you, Harry. All right. We're supposed to have lunch around now. Katie, we'll go ahead and -- We're going to break after Katie's remark here. We're going to break for

lunch, and we'll come back at 12:35.

DR. SIEGFRIED: Just to give you something to think about, we do need to discuss, also, the different recruitment assumptions when setting -- When we recommend, and if you all accept it or not, versus ABC, and so Francesca has provided the average recruitment, using the stock-recruit relationship, a steepness of 0.99, but that is averaged across the whole time period for OFL.

ABC, we've just given you the 75 percent Restrepo assumption, and that's kind of where, in the past, like for amberjack, and what we're going to follow-up with scamp, and the ABC is where we consider something different for recruitment, and so maybe consider, you know, what you all think, as far as OFL versus ABC, and how we set recruitment for each of those.

CHAIRMAN NANCE: Thank you. We'll go ahead and break for lunch, and, at 12:35 Eastern Time, we'll come back.

(Whereupon, the meeting recessed for lunch on January 10, 2023.)

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January 10, 2023

TUESDAY 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 Tuesday afternoon, January 10, 2023, and was called to order by Chairman Jim Nance.

CHAIRMAN NANCE: Welcome back, everybody. We'll go ahead and get started with the meeting. We need to further our discussions on the SEDAR 75 model and discuss whether the model, in its current state, is usable for developing any type of projections, and that's what I would like to have discussions on now, is the model itself. Ryan.

MR. RINDONE: Thank you, Mr. Chair, and so, when you guys are thinking about this -- Right now, the model is projecting forward using F 30 percent SPR, for the reasons that we had mentioned before, about just the timing of the terms of reference in Amendment 51, and so, if you guys want to have recommendations considered under 26 percent SPR, then, obviously, the Science

Center folks will need to run those and provide those later on in the meeting.

Another thing to remember is that the projections code is necessary to be run and looked at prior to making final determinations about stock status, and so, if you're going to stick with 30 percent SPR, then what run with what you've run. If you're going to look at something that uses the current proxy for MSY, then you'll need to see that updated run before you make that determination.

CHAIRMAN NANCE: I guess my question is, is the model itself -- Are there any issues with data input, data within the model? If we start running projections, then we're dealing with those. If there are things we need to change in the model, or if the model itself is not going to be accepted, I would like to hear that, also. Hearing none on that, I think what we want to do then is move forward with, I think, making the projections using FMSY -- Is it 26 percent? Luiz.

DR. BARBIERI: Mr. Chairman, thank you. This is the reason that I was asking Katie and Francesca earlier, right, and I have some motions here that I have put together, to try and speed up this process, but having the yield streams -- I mean, having the stock determination, right, using F 26 percent SPR, and then having the yield streams for OFL and ABC, it would just make it easier to do them as back-to-back motions, and we could do them tomorrow morning, if you think that would be acceptable.

CHAIRMAN NANCE: I think that's the way to go. Roy.

DR. CRABTREE: I think that's fine, but, if the stock is not overfished, or undergoing overfishing, at 30 percent, it would have to be not undergoing overfishing or overfished at 26 percent.

MR. RINDONE: Intuitively, yes. It's just a matter of -- Like, when you guys are making the recommendations though about what's considered consistent with BSIA, it's the completed product that's being determined as consistent with BSIA, and that completed product is reliant upon defining that MSY proxy as whatever it's going to be defined as, and so, if you guys are going to -- If you guys want to see 26 percent SPR, then that determination of whether it's consistent with BSIA needs to wait until you've seen that.

DR. CRABTREE: Given then, that, before we go into the motions, do we need to make that decision, as to whether we are going to go with 26 or go to 30? How many of your motions that you're getting ready to make are dependent upon that?

DR. BARBIERI: Well, both, and it could go either way, right, and, I mean, one is we're acceptable the model as consistent with BSIA and --

DR. CRABTREE: Well, Ryan, didn't you just tell us that we shouldn't make that motion until we see it with the 26 percent?

DR. BARBIERI: Right, and those will be tomorrow. I think the discussion today, right, would be how we want to structure the recruitment, right, and whatever -- If there are other decisions there in the way that the projections are structured, right?

DR. CRABTREE: Right but are we just -- Is it just going then that we do want to see the 26 percent SPR value, the reference point on the books, and I, for one, don't see a strong reason to change it at this point.

CHAIRMAN NANCE: That's the reference point that's on consideration, from the council standpoint, and so I think we want to see that. We want to see that as our projection, but are there other things that we need to consider, the recruitment and things like that, that we want to see in this new run?

MR. RINDONE: Please ask for whatever you want to ask for of the Science Center in one shot, if possible, since we do have to send them on their way at some point.

DR. CRABTREE: Just a question, and so the projections you've done now were done at 30 percent, and using the average recruitment over the entire time series, or --

MR. RINDONE: It's the model-derived recruitment from the Beverton-Holt.

DR. CRABTREE: So we're using the Beverton-Holt. Got you.

CHAIRMAN NANCE: So, from the standpoint of the SSC, any issue with going to 26 percent? John, please.

MR. MARESKA: Thank you. I have no objections with the 26 percent SPR, and then, as far as the projections go, what was presented this morning was in gutted weight, and I believe, historically, we've always done it in whole weight.

CHAIRMAN NANCE: Okay. Good. So, in the first part, 26 percent.

DR. CRABTREE: One comment to that.

CHAIRMAN NANCE: Okay. Go ahead, Roy.

DR. CRABTREE: I don't have any problem with staying at 26 percent, and I think it is appropriate, for now. I think we should recognize though that it is the linkage with comparing to red snapper that is part of that. Given the Great Red Snapper Count, and all the new information that's come in on red snapper, we had a number of discussions that we may have to rethink the reference points for red snapper, and I think that would then force us to come back to this one, since we're sort of deriving it as a comparison to red snapper, and so all of this could change, I guess, later this year, Ryan, when we get the research assessment for red snapper, or early next year sometime.

MR. RINDONE: Not this year, and next year is questionable, and so the review workshop is currently scheduled for that for August, but we'll see.

DR. CRABTREE: (Dr. Crabtree's comment is not audible on the recording.)

MR. RINDONE: We'll see.

CHAIRMAN NANCE: Make it until August, Roy. Luiz.

DR. BARBIERI: One of the things that I was just thinking about is, also, you know, the ABC, our choice, right, of how we're going to set the buffer between OFL and ABC, and the projections that the Center provided are at that yield at 75 percent of FMSY, or its proxy, which I personally feel is appropriate, given a number of uncertainties here that we cannot really properly account for, and we're having issues, you know, with the P* approach anyway, but I think this would be the time to let them know, you know, if we're going to recommend something different, so they can provide those projections.

CHAIRMAN NANCE: Jim.

DR. TOLAN: Thank you, Mr. Chairman. Personally, I am not pulled either way, 26 or 30, and I think that some of the hiccups that the original SEDAR 51 encountered -- I think they've done a good job of addressing those, and I think the other question you had is is the data good enough for this assessment, and I would say yes. The 26 or 30, we had discussed this a little bit earlier, and have we gone back to the original terms of reference, that two pages, and find out what that number is? I think it would clear up a lot of which way we go, because I was going through my folder for this particular SEDAR, and I can't find the original two-pager that

Julie always sends out, and so, I mean, I think it should be listed there, explicitly. Thank you.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Well, quickly, just to that point, Jim, the terms of reference were not specific about a proxy value for FMSY, because, at that time, the council was still having Amendment 51 going through a review and approval process, and so it was -- It left it open there, and it just said to FMSY or its proxy, and they just, not thinking about --

DR. TOLAN: That's probably why I couldn't find it.

CHAIRMAN NANCE: Katie.

DR. SIEGFRIED: I don't want to get on a soapbox with you all, but it would be helpful, and I know we're working with council staff on this, to get all of the SSC recommendations in one place, because the SSC documentation does say F 30, which we went through, and Ryan was doing his best to tell us what was happening, but everything is dynamic, and so, I mean, it's not a big deal for us to rerun right now, and so it's not a big problem, but we do need -- It would be nice if those things were easy to find, and consistent, and kept up-to-date, but, considering how many things people have to keep up-to-date, I am happy to forgive at this point, and, I mean, I don't know how all of that documentation for all of these things is kept up as well as it is.

Our suggestion, and I was talking to Peter about this a little bit, is maybe we could put it in the management history document, and maybe it's something -- I'm sure that Ryan and I will work on this together, but something where we don't have this happening in an SSC meeting.

CHAIRMAN NANCE: Ryan, to that point?

MR. RINDONE: So the SSC reviews of every stock assessment -- I collate and package them and have Julie post them to the SEDAR website for every SEDAR project, and so, if you go on there for an assessment, you will see, at the bottom, Gulf SSC review of whatever it was, and that's basically we just cut-and-paste chunks from whatever the meeting summary was, so that, whoever comes along next, because sometimes there are turnovers in analysts, they can see what the SSC decided the last time.

This was an interesting case, just because of the timing between when the amendment was being developed and the terms of reference

and then now, but, you know, this particular case is not that common, but we can certainly work with the Science Center to try to come up with a cohesive list, and we only have so many species that we have completed assessments for.

CHAIRMAN NANCE: Thank you, Katie, and thank you, Ryan. Will.

DR. PATTERSON: Thank you, Mr. Chair. I don't remember really the discussions about 26 or 30, but, you know, the 26 for red snapper was a pragmatic solution, given the different selectivities and trying to reduce the fisheries proportionally to get to the management criteria at the time, and so F 30 percent makes sense to me, and that's what we recommend for species with a similar life history to gray snapper, and F 26 seems kind of odd.

CHAIRMAN NANCE: I guess, for my own edification, I'm hearing that we need to go to 26, or can we use 30, and is there something that's being -- Does Amendment 51 specify that 26 percent be used for all the snappers?

MR. RINDONE: No, it does not specify that 26 percent be used for all the snappers, but it just specifies that it be used for gray snapper, because, at the time, the reproductive potential of gray snapper, the productivity of that stock, was not assumed to be dissimilar from what assumed for red snapper at the time. You know, like Dr. Crabtree noted, we have some different musings now, perhaps, about red snapper, but what the proxy for gray snapper should be is certainly something that you guys can debate, and, if you're going to recommend something other than 26 percent SPR, which is what's on the books, then we just need to provide justification for why.

CHAIRMAN NANCE: Thank you, Ryan. Roy.

DR. CRABTREE: Yes, and that's the part that gives me a little difficulty, is, I mean, 26 percent is a little odd, I will agree, only I think because it's not a nice, round number, like 30, and there's really not that much difference between the two. In previous discussions, talking about 26 percent had to do, well, do you believe that gray snapper is likely to be more productive, or is there a reason to think it's less productive than red snapper, because it seems to be that you would be saying, if we need to have a more conservative reference point for gray snapper than red snapper, we're arguing that it's less productive.

Most of the discussions that I've been involved in that, if anything, it was thought that gray snapper might be a little more productive than red snapper, and I don't know if that's the case

or not, but it does seem, to me, at any rate, that we ought to get to some better resolution with red snapper, and where we are there, before we come back and redo it, but, if we can make a solid argument for why 30 percent is a logical place where we ought to be with gray snapper, then so be it, and I wouldn't have any heartburn with that, but I'm just not sure -- I'm not really sure what that argument is, at this point.

CHAIRMAN NANCE: Will, please.

DR. PATTERSON: With red snapper, when we were setting the proxy at F 30 percent, we reviewed a series of papers that looked at life history and what the recommended criteria, or benchmark, would be if we didn't have -- If we couldn't estimate MSY directly, but then -- F 30 percent was what was recommended for red snapper, but, in the process of going through, you know, and Clay Porch did an analysis, fifteen years ago, when looking at reducing the red snapper fisheries proportionally, so that you could get down to the threshold value, and it turned out that you couldn't quite get to F 30 percent and that 26 percent was the answer, and so it was a pragmatic solution.

Solving for F 30 percent and reducing the fisheries proportionally, given their different selectivities, got us to 26 percent, and we said close enough, and it makes sense, and let's use it, but the rationale was 30 percent, in that case, and that's how the analysis worked out.

CHAIRMAN NANCE: Okay. 26 percent is what is being on the books, and so, unless we want to have a discussion on do you think 30 percent is better, or do we go with 26 percent, as what is proposed in Amendment 51, and do we have things, at this meeting, that we can move towards recommending 30 percent, or do we stay with 26 percent and recommend that for our projection runs?

DR. KILBORN: Mr. Chair?

CHAIRMAN NANCE: Josh, yes.

DR. KILBORN: I was looking at Amendment 51, and the discussion around it, and it looks like we had this conversation once before, and we asked the Science Center to come up with new projections, ranging from 23 percent to 30 percent, and we did not come to a consensus. We agreed that it was scientifically valid at 26 percent, but that we would maintain our previous recommendation of 30 percent, and that's how it's written up in Chapter 2, on page 8 and 9 of the amendment, and so I think we should stick with F 30, 30 percent.

CHAIRMAN NANCE: Josh, is that discussing gray snapper?

DR. KILBORN: That's correct.

CHAIRMAN NANCE: Okay. Katie.

DR. SIEGFRIED: I am just looking through the global MSY document, and Dan Goethel and Matt Smith and others worked on that, and what Josh said is correct, as far as I can tell, the range that they went over, and the discussion is basically that 26 percent SPR is the lowest reasonable value that should be considered for red snapper, and maybe that's the same as what Will is saying, that that was what was really practical, a pragmatic decision, but that's the lowest possible SPR allowed in that analysis.

I'm not sure that that's necessary for gray snapper, to go to the lowest necessary, and it's a range, and it depends on the amount of discarding, or bycatch, in this multispecies fishery, and that's what the global MSY was about, and so I don't -- Again, we don't have like a Center position, right at this moment, but I'm just looking back at the global MSY that was put forward by the Center, and it certainly wasn't gray-snapper-specific.

CHAIRMAN NANCE: Thank you. Luiz. Ryan and then Luiz.

MR. RINDONE: Thank you, Mr. Chair. Directly from the amendment, it says, ultimately, the SSC recognized that 26 percent SPR is scientifically acceptable as a proxy for MSY, but maintained its previous recommendation of the more risk-averse proxy, using 30 percent SPR, because of uncertainty in the SEDAR 51 assessment. SEDAR 75 has made a lot of corrections and improvements upon SEDAR 51's base model, and so that's worth considering in that discussion.

Regardless, whether you guys want to move forward with 26 percent or not, you're going to need to see it, to be able to make the determination that either 26 percent -- The model using 26 percent represents, or is consistent with BSIA, or 30 percent is consistent with BSIA, and so the Science Center should take that direction, that a run using 26 percent is going to be necessary for the SSC to make that National Standard 2 determination, and so that's going to be necessary, no matter what.

Now, what you ultimately recommend as consistent with BSIA, and put towards the council, you can discuss and make that determination for yourselves, but you will need to look at both.

CHAIRMAN NANCE: Tom.

DR. FRAZER: I'm just -- I'm interested in a comment that Will made, you know, and the reason that we got to 26 percent for red snapper, you know, and there are many, right, but, ultimately, the more recent data collection efforts would suggest that that population is less productive than we thought it was when we established the 26 percent, right, and so, for that reason, I would think that you would think long and hard about going to 26 percent for gray snapper, if that was your kind of bottom-line, you know, example.

CHAIRMAN NANCE: Will, please.

DR. PATTERSON: I just sent a paper to the meetings email that is a recent Jiao et al. meta-analysis that uses the RAM database and a series of assessments done on a range of stocks, and the median estimate for SPR at MSY, for perciform fishes, is 0.463, and so 47 percent.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Right, and my thought is that -- You know, I know that the committee has changed membership somewhat, right, over the last few years, and so that's understandable that there might be some differences of opinion on how this is being handled, but we were asked to make a recommendation to the council based on scientific criteria, and we did, right, and the council, given our recommendation, decided to --

Seeing latitude in our recommendation, it decided to make some decision on the SPR level that was within what we thought was acceptable, and so regulatory amendment went through, and the agency, through the Secretary of Commerce, gets final approval, you know, and now -- I mean, I think, unless we have very specific justification for gray snapper, to change this, and we have made recommendations to the council, fairly recently, about changes in reference points, and we provided justification to the council, you know, for the council to evaluate those recommendations.

I mean, here, you know, if we feel that there are specific points, right, that would prevent 26 percent from being a reasonable and acceptable proxy for MSY for gray snapper -- I just wouldn't go there, because it's just difficult to justify us not staying consistent with a previous review and recommendation that was put in place specifically because the regulatory amendment was to be focused on stock status determination and be better defined for proxy, you know, MSY choices, and so I just wanted to put this

there on the table.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: So, one, I agree with Ryan that we're going to need to see 26 percent, either way, but it seems, to me, that I come back to, if we want to stay consistent with our last recommendation, and we said that the SSC recognized 26 percent SPR as scientifically acceptable as a proxy, but recommended the council be more risk averse and go with 30 percent, we could essentially make that same statement. I suspect the council will then stay at 26 percent, but who knows, but I think we could just stay with that, yet again, because we really don't have any information to base changing it.

CHAIRMAN NANCE: I think that was said in that is certainly pertinent, and I don't see, at this meeting, anything that we've discussed that would move it up past 30, up to 40 and those types of things. John, please.

DR. FROESCHKE: Just a question. Do you recall, in SEDAR 51, if steepness was also at 0.99? I mean, one thing to think about is we know, in reality, it must be less than that, and it couldn't be more, and so that's really the most optimistic possible situation, and so, if you're mixing and matching, for example, and if you set steepness at say 0.8, and SPR at 26 might be equivalent to SPR 30 at 0.99 and things, and so just -- But it seems like we're consistent in that, and so okay.

CHAIRMAN NANCE: Okay. Right now, we'll recommend that the Center run it at SPR 26 percent. Are there any other -- Then we have recruitment a certain way that it's being run, and do we have a change in that or leave it for the run? Luiz.

DR. BARBIERI: Well, Roy had made comments, right, about recruitment that I thought -- I mean, I was thinking of using the long-term, based on what Harry had pointed out, but I think that Roy's argument convinced me that, you know, perhaps using a shorter-term recruitment would be appliable in this case. You know, either or, but I thought that those points were valid.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Is it burdensome, to you guys, if we were to ask you to give us a set of projections based on average recruitment over say the last fifteen or twenty-year time period, or is that a relatively simple thing to do?

DR. SIEGFRIED: No, especially because we estimated recruitment devs to the terminal year, and so that would be an easy setting. However, are you recommending that for the OFL or for the ABC? We're recommending that the OFL be based on -- Again, I know this is annoying, but we're not saying steepness is one, or 0.99, and we're ignoring the stock-recruit relationships and assuming average -- You know, basically, average deviations around a flat line. For the OFL, we're just using those average deviations around a flat line to calculate the flat line, and using that as our recruitment for OFL.

For ABC, we could use the last ten years of estimated recruitment, which is higher than that long-term average, and we've never done that before, right, and we've always had the lower, and so I'm not even sure if it would be over OFL.

DR. CRABTREE: What I was thinking is that we would use this for the OFL, and then the ABC would be reduced by some amount below that, and so, if we use short-term recruitment, say the average over the past fifteen years, that would be used to derive the OFL, and then I think that we looked at had the ABC set at fishing at 75 percent of the OFL level, and so we could just do that again with it, because, yes, I think, if we look at the last fifteen years, that's going to give you a higher OFL, and we don't want to make a mess for them all if we set the ABC above the OFL somehow, and we can't do that, and so I think, Luiz, if that's something we want to look at, and what I'm hearing is that's not difficult to do, I think looking at something along the lines of the last fifteen years would be reasonable.

DR. BARBIERI: This is not in a rebuilding, right, scenario, this stock, but the issue is the long-term productivity of the stock, right, for setting reference points, versus short-term projections for catch advice in the short-term, right, and so I kind of tend to agree with -- I think you made that point, Katie, that using the long-term, for developing the actual reference points, which equate to OFL, would be aligned with OFL, and then, short-term, for the short-term catch advice, the last three to five years, and that would make the most sense.

DR. SIEGFRIED: And if it's close, but we can't have any that is higher than OFL, and so, if that recent recruitment causes the catch advice higher than OFL, then you have to discuss how to decrement the OFL, or whether to.

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

DR. SIEGFRIED: Decrement the OFL to get the ABC is what I was

thinking, yes.

DR. CRABTREE: But you are talking about estimating a new OFL based on the more recent recruitment series, right?

DR. SIEGFRIED: No, and I'm suggesting what we provided is a long -- So the average recruitment we put in there will give you OFL, and so that's using long-term recruitment, and then what we've done, but this is for other species with lower recruitment in the recent time period, using ABC with that recent recruitment.

DR. CRABTREE: But why couldn't you use the long time series, that you've done now, and that generates your MSY estimates and things, and then redo the OFL, based on the more recent catches, and so you would have a kind of more long-term average OFL, and then you would have based on the more recent recruitment, and so that gets a little confusing.

DR. SIEGFRIED: We can do both, to show you, and those are both possible, but I'm just saying what we're proposing, and what we've had sort of as a standard best practice recently, is to use long-term recruitment for the OFL, and then the ABC is some sort of subset of whatever that OFL is, but we haven't had it where we've had high recruitment in the last ten years.

DR. CRABTREE: I know. That's where it gets squirrely, and I don't know how you -- It seems to that, whatever the OFL is -- If it's an indicator of overfishing, it has to reflect the more recent recruitments that we're basing the catches off of, right?

DR. SIEGFRIED: If we think that will continue into the future for long enough, then I would agree with that.

DR. CRABTREE: Well, we're, in terms of future, talking three to five years, and I would say, if we don't think it's likely to persist for that long, we shouldn't even use it, and we ought to stick with the whole time series.

CHAIRMAN NANCE: I think the issue is using one set to determine status of the stocks and using a different one to determine short-term projections. I think we're mixing those two things up. Will.

DR. PATTERSON: I agree with the last sentence that Roy said about, if we don't believe that recruitment is going to stay at that high level in the near future, then we should not use that approach, and instead take the long-term average, and, in fact, recruitment hasn't stayed at that high level, and it's gone back down to the mean of the time series over the last four years, and so already

the stock has shown that it's not staying at that spot.

CHAIRMAN NANCE: Will, would you propose an issue with -- If we used the long-term average for our OFL, to determine status of the stock, and also used the long-term recruitment for our projections, realizing that this last part of the recruitment is higher than it should be, and it's not going to stay at that level.

DR. PATTERSON: I haven't come to a conclusion, myself, or a decision, about where I would vote on this. However, we're talking about equilibrium scenarios, and the stock, over the long-term of its evolutionary history, has evolved to have these fluctuations in recruitment.

We're coming out of a cycle of higher recruitment, at least for the time series of data for which we can actually estimate it, and now it looks like the recent trend has been to go back toward the median, and it could drop below it, and who knows, and we're not there yet, but, when you're setting OFL and ABC, it's not just to fish down the biomass that's there now, but it's the resiliency of the stock long-term.

CHAIRMAN NANCE: Thank you. Doug.

MR. GREGORY: Thank you, Mr. Chair. There is variability in recruitment, but it's been an increasing trend for twenty years, with a lot of variability, and my question, my concern, is, given what Katie was saying about to calculate OFL and ABC projections, it seems, to me, that, if we use two different -- Well, first, I think the fact that we're dealing with a higher level of recent recruitment than a lower level calls into play how subjective our decision was previously to use a different number of years for projecting ABC versus OFL, because we don't want to do the same thing we did before, only because recruitment is higher than the long-term average, and so I think we should get away from that.

Then my question is why do that anyway, and aren't we -- If we choose one timeframe for OFL, and another timeframe for ABC, isn't that the measure of our uncertainty, and that means -- If so, then that means we shouldn't be having to go through the control rule on top of that, because we're adding one conservative measure on top of another conservative measure.

So, for me, it seems that we should be using the same timeframe of projections for OFL and ABC, if we're going to use the control rule, or if we're going to use 75 percent of F of MSY, because, if we're applying that, in addition to a different timeframe for projections, it's like double-jeopardy, and please explain where

I'm wrong with this. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Luiz.

DR. BARBIERI: Doug, I'm not sure that I can explain even whether you're wrong, but just a reminder that MSY is really thought of, you know, typically, as a long-term value, right, and so, by definition, you're not talking about, you know, short-term MSY, right, and so I think that coming up with something that really reflects a long-term pattern of stock productivity for MSY is really the most appropriate, and so, based on that, I don't think that our decision for greater amberjack, and perhaps some of the other most recent stocks, was subjective.

I mean, we actually discussed this quite a bit, and we made that decision based on what we felt the reference points that would best reflect the long-term productivity of the stock and not necessarily the lower level of recruitments that have been observed recently, right, but we used the short-term lower recruitment, because that reflects what is happening right now, and the catches that are going to be happening over the next couple of years, and so, to me, that was appropriate, and, here, I see it the same way, that, over time, and Will brought this up, our long-term perspective of the stock, with ups and downs in recruitment, right, and so MSY, as we look at this as a long-term average, would be, you know, something that integrates all the potential variability in recruitment of the stock.

Then, for short-term advice, if the stock is now in a state that is highly productive, for the next several years, we can have higher catches, right, but, eventually, that's going to be readjusted, if the productivity of the stock changes again over time.

CHAIRMAN NANCE: I think one of the differences, also, is that, for some of the stocks, we've seen a decrease in recruitment that has stayed there. With gray snapper, we've seen an increase, but now we see a downward trend also, and so it seems to be it was up, and it's coming down, and so there's a difference in dynamics between the two. Roy.

DR. CRABTREE: Yes, and the way I'm thinking about this is so the long time series that you guys used in your current estimates -- That's the basis for the stock status determination, and so you have FMSY, on which the determination of overfishing is based, and then BMSY and MSST, and that's the basis for the determination of overfished status.

The OFL is then the FMSY estimate times our best estimate of the current biomass, and I think what we're saying now is that we think the better estimate of what the current biomass is is to use the shorter recruitment time series, which is going to give you a higher biomass, and that's going to produce a higher OFL, and an OFL that's higher than the estimate of MSY, because, really, if we believe that recruitment has been higher, then the biomass in the water is higher than the average biomass, or the average measure of BMSY, and so, with that, you would end up then with a higher OFL that reflects the shorter time series, and you would then decrease that, based on your measure of uncertainty.

Now, that's setting aside the issue that Will raises, that the recruitment seemed to be falling back off, and maybe we shouldn't use the shorter time series at all, but, at least in terms of how the quantities calculate, that's kind of how I'm thinking about it, and does that make sense?

DR. SIEGFRIED: So we haven't done it in a three-parter, the way you're talking about. We've combined the first two steps of setting -- Or doing equilibrium projections to get status, and that's also the OFL projection. We haven't decoupled the status and the OFL projection at this point.

DR. CRABTREE: It seems, to me, if the OFL really is meaningful, in terms of allowing you to use the catch level to indicate whether you're overfishing or not, then it has to then reflect the long-term equilibrium FMSY estimate, but it has to reflect what you think the biomass in the water is at this time, or it's just not going to give you a meaningful determination.

CHAIRMAN NANCE: I am more at the point where I'm looking at the long-term average for OFL, but I think it's also a good indicator for ABC, and that that seems to be where we're at. Everybody sees fluctuations, high and low, around that, but the long-term average seems to be where gray snapper are sitting at, and that's my -- Will.

DR. PATTERSON: I mean, we're so used to thinking, or dealing, with situations where the stock is in a rebuilding mode, or is near-depleted status, near-overfished status, and so, here, we have an estimate where the stock is above that, but we're still -- You know, we still should be managing it at that equilibrium level, and so you get to a point where the catch is here, and, if recruitment goes down, and recruitment goes up, the catch, you know, stays at that level, and, to guard against poor-recruitment years, high-recruitment years --

I mean, this trend is interesting, because of the time series, and, although there's some wiggle to it, you know, generally increasing over the past fifteen years, and then, the last four years, this decline back to the median, but, I mean, that's the way the system is set up to work, but it's just we're never on that side of things, or we're rarely on that side of things.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Mr. Chairman, and, to add to Will's point there, I mean, right now, we have an ABC Control Rule, right, that the council -- A generic amendment that includes the ABC Control Rule, and, at least as we have it right now, it's codified how we're going to define OFL, and that aligns with MSY, right, and so changing that I think would be a big deal, in changing those criteria, and so I will draw the stick with that, which is more in line, I think, with the National Standard Guidelines, right, and I think it's the best approach, to stick with an MSY value that aligns with OFL and then provide an ABC that's focused on, you know, shorter-term catch advice.

CHAIRMAN NANCE: Katie.

DR. SIEGFRIED: I don't know if I'm just causing more problems or what, but so, thinking more about what Roy said, I mean, just because it's not decoupled here, it doesn't mean that it's not easy to accomplish, and so we can just -- We've done this before, with our current projection code, and we can provide benchmarks that can give the status with the stock-recruit curve. If there is discomfort with continuing using the stock-recruit curve, because it's a flat line, we can use recent mean estimated, the whole time period, you know, whatever configuration of recruits we need to.

I just wanted to point out that, if we have an MSY proxy that's 26 percent SPR, that's already sort of the lowest practical value that's been recommended by this global MSY paper, and then, if we're assuming high recruitment, that's a sort of optimistic scenario. We do have high uncertainty in this model in general, and so I'm not sure we should -- That we would propose to be super confident in those, to assume they're going to continue at the same value for five to ten years. I mean, I don't know if anybody has that crystal ball.

Then, just to -- I am seeing OFL and ABC being very close if we use recent estimated recruitment for the ABC, but longer-term average recruitment for the OFL, because it's higher in recent years, and so it's three optimistic scenarios, all in line with a

very uncertain set of data feeding this model. I don't have a quantitative way to discuss that with you right now, but it seems like it's high risk for uncertainty, high risk for uncertainty, followed by high risk for uncertainty.

CHAIRMAN NANCE: I hear what you're saying. To me, we've got maybe four different things here. We've got 26 percent versus 30, and we've seen 30, and we need to see 26, and so that's what we need to ask for. The OFL being run at -- With long-term average recruitment, and now we're talking about -- I think the last thing, and I think it seems like everybody is in agreement with those three, and this last one is do we want to see the ABC run with the long-term average, or do we have something where we want to see a short-term thing, and I'm -- My position is, just me, is I would just the long-term average.

Katie brings up some good points. We've got a model that's got a lot of uncertainty in it, and how confident are we in those last values, and are we willing to project those out, using those projection times, or do we simply -- Do we have more confidence in the long-term average, and that's what were being used for our projections for catch advice, and so -- Roy.

DR. CRABTREE: I don't have any problem if the level of comfort with using the long-term time series for catch advice is greater, and then that's fine, but I still have an issue with how we're talking about OFL. The OFL, according to the guidelines, is not a long-term average. The OFL means, and I am reading from the guidelines, and it means the annual amount of catch that corresponds to the estimate of MFMT applied to the stock abundance. It's an annual number that, if you had perfect data, would change every year. It reflects the current biomass and not a long-term equilibrium kind of average of it.

CHAIRMAN NANCE: But it still has a recruitment value that's being used to calculate that.

DR. CRABTREE: Yes.

CHAIRMAN NANCE: Where does that come from? Are you saying it's this one, or is it that we're basing it on a long-term trend, and are we more comfortable with that long-term trend, calculating the OFL, which is, I know, right there.

DR. CRABTREE: Jim, in theory, the OFL should be calculated based on the most current annual measure of biomass that you have. Now, we can say that we're not comfortable using the more -- Just a shorter, abbreviated time series for it, and we don't think we can

reliably calculate it that way, but, typically, the way the guidelines envision it, the OFL is not a long-term average. We do it that way, a lot of times, because we don't have the ability to do it any differently, but that's not the way it's envisioned in the guidelines.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Well, maybe not. If that's the case -- I mean, I hate to say this, but I think that we're going to need to request the agency to come and give a presentation that clarifies those issues, because our definition of MFMT seems to be tied to MSY, right, and there is also how we consider OFL during rebuilding plans, right, and what --

The agency has provided us guidance for what we consider ABC and OFL in a rebuilding plan and how that OFL is estimated, and so I think those are excellent points, and I think we would benefit from having that discussion, right, and clarification, I mean, the same way that we had folks from OST come over and give us a presentation on best scientific information available, and I think it helped us understand some of the intricacies with that, and I would like to see a presentation, from the agency, that basically discusses, you know, from their national perspective, looking at different regions and different management plans and different councils, you know, how they perceive those quantities, so we can have just better clarity on those things.

CHAIRMAN NANCE: Katie, do you --

DR. SIEGFRIED: Just quickly on that?

CHAIRMAN NANCE: Just on that, yes.

DR. SIEGFRIED: The MFMT, you're kind of discussing it -- What you want it to be now. I mean, it's the FMSY proxy, and so this has been a long-term discussion between the Center and the councils about who sets that, when they set it, and so I don't know if that's actually from an agency point of view, as much as -- I mean, from the agency point of view, we talked to you about the biology of the fish, and what you're risking, or gaining, by using different FMSY proxies, but MFMT seems to be something we're talking about right now, and so I'm not sure how much -- I would like clarity too with whose job it is to pick it, and I don't know what more I can provide about it, but it's simple, but complicated, at the same time.

CHAIRMAN NANCE: Thank you. Dave.

DR. CHAGARIS: Just following-up on a comment that Roy made, I mean, it's true that OFL is not a long-term average value, and it's the annual catch that will get you to a long-term SSB at MSY, and so, depending on where you're at stock-status-wise, your OFL will change, as it should, and I think what you're suggesting, by using a higher recruitment and equilibrium analysis to get at MSY, is basically like another regime shift, you know, on the positive side, which I'm not very comfortable with.

I think what Luiz has described, we can do it both ways, and we still maintain our long-term MSY estimate, and the OFLs to get you there, but you can have short-term recruitment in the ABC projections, to allow for a little bit more catch when the stock is higher.

Now, there is risk for that, because the terminal year in the assessment is three years ago, and it's already showing the decline in recruitment coming up to that terminal year, and so I wouldn't be supportive of, you know, changing the reference point calculation, but, in the projections, I think we have liberty to increase, or decrease, recruitment, as we've done for other species.

CHAIRMAN NANCE: Thank you. Will.

DR. PATTERSON: Part of what you just said -- The first part was the first thing that I was going to add, but then, the second part, I disagree, because, if we're using two different time series of recruitment, one to estimate the equilibrium situation and the other to set catch advice in the near term, as they go through the model, they're going to produce different FMSY estimates, different MFMTs, and, you know, the MFMT is based on long-term equilibrium stock productivity, and the reason that OFL goes up or down is because that F value is being applied to a larger or smaller stock. I think we have to use a recruitment scenario, and utilize that both for the MSY, you know, equilibrium estimation as well as the OFL in the current year, or in near-term.

CHAIRMAN NANCE: Thank you, Will. Mike.

DR. ALLEN: Thank you, Mr. Chairman, and I agree with what Will just said. It seems, to me, that we don't have the evidence that the last ten-year upswing in recruitment is anything other than noise, and I don't hear anyone making an argument that it's a regime shift, or something like the argument that we had with amberjack, which had stayed low recruitment, despite a lot of changes in management, and, if this is just noise in the recent

recruitment time series, then I don't think we should use it for long-term or short-term predictions. Thanks.

CHAIRMAN NANCE: Doug.

MR. GREGORY: Thank you. Well, it's been a ten-year increase, until the last couple of years, and so I started to say that I'm getting -- Well, I have two or three comments. One is we cannot use the short-term recruitment time period for ABC, shorter than the OFL, because that would put ABC above OFL, which doesn't make sense, and so, again, we need to use the same time period for both OFL and ABC.

I may be naïve here, but it seems, to me, that part of our problem with long-term MSY management, and short-term OFL management, is the fact that we're using proxy, instead of actual MSY. If we had an MSY estimate of ten-million pounds, let's say, we know where we are today, and we set F based on what it would take for us to get to that MSY, or OY, and it would be straightforward, but, here, it seems, to me, that our MFMT for OFL is the same as our MSY, and so it's the same F, and so, to me, that's part of the conundrum.

The main point that I want to make is we need to use the same time period of recruitment for OFL and ABC, and be consistent with it, because, again, it's subjective, if we use a shorter time period when recruitment is low and we ignore it when recruitment is high, and so, to avoid that problem, where ABC potentially could be higher than OFL, just use the same years for projections and then apply our F of 75 percent, or our control rule, to reduce ABC from OFL. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Go ahead, Roy.

DR. CRABTREE: If my sense of where we're coming to though is that most people don't seem comfortable with relying on the most recent time period, and they want to go with the whole time series, which is where the Center calculated this to begin with, then we can put these other discussions off until another day, because everything is going to be based on that longer time series, and then, in that case, all we need the Center to do is give us the 26 percent SPR numbers, and we're done, and so, unless there is still people who really want to see a shorter time period used for ABC, and, in my opinion, it would have to be OFL as well, I think we can go with the longer time series and move on.

CHAIRMAN NANCE: Okay, and I think this discussion, remember, is gray snapper. This is not the overall, every time we see a fish, discussion, and so I'm comfortable with, for gray snapper, using

the long-term average for both OFL and ABC. Harry and then Will.

MR. BLANCHET: I will pass.

CHAIRMAN NANCE: Will.

DR. PATTERSON: Dr. Barbieri had mentioned, right after lunch, that he had a list of motions that he had crafted, and I think it would be useful if we accepted the assessment first and then moved into our, or his, motions about the projections.

CHAIRMAN NANCE: I think the problem, Will, is that the motion for the model is made up of two components. It's accepting the model and what the status of the stock is. Since we haven't seen 26 percent, and we haven't recommended 26 percent, I don't think we can make that motion yet.

DR. BARBIERI: Without making the assumption.

CHAIRMAN NANCE: Without making the assumption. Now, it's got to be below, but anyway, but until we see it, and so the motion first needs to be accepting the model and then accepting that it produces not overfished and not overfishing, and so I'm not sure that we're able to make any motions, at this point, until we see the 26 percent run, and, unless I hear a cry from the group, using the long-term average. Jim has got a cry about the -- So let me hear Jim first and then Tom.

DR. TOLAN: No, I'm not going to cry, but I wanted to -- I am agreeing with the long-term average, and I think that's the way to go. I don't want to be viewed as -- This is coming not as an SSC member, but it's coming from the outside, and I don't want to be viewed as us cherry-picking data for this part and this part to make it convenient.

I want to return to something that Ryan said earlier, and, once we get these new numbers, from the BSIA, how do we objectively determine which one is best? That, I am struggling with.

CHAIRMAN NANCE: That's a problem for me too, because we usually get one projection, and, right now, then we're coming back -- Now we're going to see 26 and 30 percent, and I have the same -- Ryan.

MR. RINDONE: I will bail you out on that one, and so the issue of using 30 percent, like we had discussed, is a clerical issue, just the timing of when the terms of reference were submitted and the development and implementation phase for Amendment 51, and so, normally, these things are spaced far enough apart such that the

MSY proxy isn't something that changes, for a stock, between when the terms of reference for an assessment are finalized and the assessment itself is finalized, and that is what happened here.

By seeing 26 percent SPR, if you guys are comfortable moving forward with 26 percent SPR, then you can just say we're going to do that, and you would need some sort of justification for going forward with 30 percent SPR though, because it is different from what is currently codified on the books, and so, if you see 26 percent -- You know, once you guys see 26 percent SPR, early tomorrow morning, or Thursday, or whenever the Chair decides to fit it in there, that decision can be made then, quite simply and straightforward, especially if the selection is just 26 percent. If it's going to be 30 percent, then, yes, you need some defensible discussion about why it should be increased.

DR. TOLAN: To Ryan's point, Mr. Chairman?

CHAIRMAN NANCE: Yes.

DR. TOLAN: I think, as a body, we have that right now, because we're on record as saying, even though the 26 percent for the Amendment 51, this body thinks these reef fish ought to be handled under 30 percent, and I think we've stated that now, and so I think we have a leg to stand on there.

CHAIRMAN NANCE: Mike, is yours a comment to that point?

DR. ALLEN: Well, I was just going to make the point that the 26 percent projections, the model results, are just going to be further away from overfished than it is right now, and they're not going to be that informative to what we have in front of us, really.

MR. RINDONE: But, because it's what's on the books, you still have to look at it.

DR. BARBIERI: By the way, and sorry for interrupting, but this is my point, Jim, is it's just a matter of convenience, right, that we're going to have to see them anyway, right, and we're going to have to get the new yield streams, right, which we haven't seen yet, and we don't have those new yield streams, and so it's just a matter of convenience that they come and present that part, and we have the motions ready, and boom.

CHAIRMAN NANCE: Doug, to that point, please?

MR. GREGORY: Ryan covered most of it, but I think we have to send

both to the council, and if we're recommending 30 percent, and our ABC is going to be less than what they would be with 26 percent, I presume, and so the council will either have to go through a plan amendment process, or some other process that's more lengthy than just changing the quotas, to adopt the 30 percent, and so there's no urgency in this fishery, and so I see no problem with that, but it's a more involved effort, administrative effort, to go back to 30 percent than it is to stay with 26 percent, and we've got to give both sets of data to the council and give them the opportunity to send it back to us and tell us that they prefer 26 percent, because that is their decision, and then we just have to change our ABC at the next meeting, in March, and so that's the way I see it, going forward, and it can be done, and it's not that difficult. We've had more difficult situations in the past. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Ryan.

MR. RINDONE: Thank you, Mr. Chair. We went through this already with gag, and you guys had determined that Fmax for gag was not defensible, and you provided a justification for why, and, for the FES version of gag, you recommended 30 percent SPR. For the SRFS version of gag, you recommended 40 percent SPR, but you didn't provide competing yield streams for those, and you just recommended what you recommended, and then that's the -- Those are the catch recommendations that you put forward.

As John had talked about with Reef Fish Amendment 48, all we would need to do for respecifying the MSY proxy for gray snapper is just to specify it as whatever it's being updated to be in a plan amendment, and, well, we've always got one of those going on, and so we can find one to plug it into, and it's just a quick blurb in there, and so it would be easy to do on that, and so, if you guys decided that 30 percent SPR was the way to go, then that's what you could put forward, and along with your justification for that.

Again, like you mentioned, the stock is heathy, and an estimate under 26 percent SPR is going to be marginally -- An estimate of it being marginally more healthy, but, like Dr. Siegfried had mentioned, you know, 26 percent represents the lower bound of what you guys determined to be acceptable and plausible, and recruitment information is already uncertain as it is, and, I mean, it competes with discards, as far as what's more uncertain in an assessment, and so you're flirting with aspects of the model that -- You know, some of the things that we know less about than compared to other parts, and so I think that's where I've heard the discussion going anyway.

CHAIRMAN NANCE: Sean.

DR. POWERS: So a couple of people have said we're on the record as saying SPR 30 percent, and I don't think we are. I mean, I don't think we've had that conversation for gray snapper.

CHAIRMAN NANCE: I think that's what they were reading, Sean, is that was the SSC's determination, and it was proposed in Amendment 51.

MR. RINDONE: You guys had discussed a review by the Science Center at the January 2019 meeting, where they looked at 26 percent, 30 percent, and 40 percent, and, basically, what was determined by the SSC, at the time, was that 26 percent represented the lower bound of plausibility, and that you thought that 30 percent was really more appropriate, given the uncertainty that was expressed in the SEDAR 51 stock assessment.

Now, SEDAR 75 makes many notable improvements upon SEDAR 51, but you're still in a situation where you're dealing with recruitment information, which we've had a lengthy discussion here so far about where this signal is really being generated from, and is it coming from the age-zero, or the age-one, FWRI survey, and does it have something to do with CPUE from the shore mode, and where is it really coming from, and, without a firm finger placement on it, and maybe it's D, all of the above, or, you know, it's kind of hard to say.

The functional difference in what the projections will look like between the 26 and 30 percent I certainly wouldn't expect to be dramatic, and so, either way, both should yield a not overfished and not undergoing overfishing stock status determination, and so there shouldn't be any expectation of deviance there.

CHAIRMAN NANCE: Tom.

DR. FRAZER: All right. Thanks, guys, and so I'm expecting to see two scenarios, right, 26 percent and 30 percent, right, and I don't know if this is the appropriate time, actually, to ask for this, and the council will be interested, and, I mean, the way that the catch levels are set in these current OFL and ABCs for a five-year period are declining catches, but they would probably like to see a constant catch scenario over that same timeframe, because we're very interested in promoting stability in the fishery, and I figured that I would ask now, rather than wait until the very end and say, oh yeah, let's do that, too.

CHAIRMAN NANCE: I'm glad you're bringing it up now, and that's

perfect, because we would hate to have two runs. Katie.

DR. SIEGFRIED: Thank you, Mr. Chair. Great, and so this is an unusual situation, where we're fishing it down to get to MSY, instead of relieving pressure, fishing pressure, to get back up to MSY, and so the year-by-year allowable catch at OFL -- It changes, as Roy mentioned, and so it's going to go down. Giving you a constant, over all those years, will be the minimum of those years, in order to not -- In order to not, like in the third or fourth year, or fifth year, be higher than OFL, and do you see what's in my brain? I don't know how you would, but --

DR. FRAZER: No, I saw that, right, and I guess what I was trying to figure out is, is there a scenario where you can maximize the constant catch, and that's what they would be looking at, right, is what's the maximum constant catch that you can accommodate in this five-year period, and it looks like John has something he wants to say.

CHAIRMAN NANCE: John, please.

DR. FROESCHKE: I thought we went all through this before, and Clay -- You know, there was a fairly complicated analysis, and what the end result was was that dealing with this, and taking the average, was close enough for government work, and that would be fine, even on a declining yield stream. We would have to look and see where that was done, but I know we had that discussion.

MR. RINDONE: Yes, and it was essentially that, you know, you were accepting some amount of overfishing in the early years and some amount of -- Sorry. Some amount of underfishing in the early years and overfishing in the later years, with the understanding that you're still in a portion of the projections where you're fishing down to MSY, and so there's a -- Not to say an overabundance, but there's more fish than are projected that are supposed to be out there.

DR. SIEGFRIED: If it's legally acceptable, than an average is super easy to calculate for you, to give you the constant catch, but that means, to me, that Mara, or somebody, would have to be consulted, to verify that those last two years, where there would be overfishing, based on what the OFL was projected to be, and underfishing is not illegal, but not optimal, in those first two years.

CHAIRMAN NANCE: Luiz, go ahead.

DR. BARBIERI: To that point, Katie, we actually had a meeting

that Rick Methot was at, right, and, at the time, he was representing OST, and he was talking about a bunch of criteria, remember, and he brought this up, and we asked this question explicitly, because we felt that we needed to know how to get this resolved when we were trying to calculate average catch, or constant catch, and he said, yes, just a simple --

There are so many uncertainties associated with those quantities, and to actually calculate an average is much better than coming up with any other way of estimating that, and so I'm pretty confident that it is acceptable, and we've been using that for a while.

CHAIRMAN NANCE: Doug.

MR. GREGORY: NOAA General Counsel has informed us that we can recommend an average over a five-year period, or a three-year period, or we could recommend the annual, and we just have to recommend the same method for OFL and ABC, and so that -- We've been doing that for years, and there is no problem with that, and it's not like -- I mean, if you think about it, the deviations around that mean, for the five-year period -- They average out, right? You've got the positives and the negatives are all the same, and so it's not an issue, as far as what Katie was asking, and so we can put that to rest.

CHAIRMAN NANCE: Okay. Thank you. So it sounds like, if you have the -- You were suggesting that the lower limit be used as the constant catch, but, if the average is used, that's -- Both of those are very easy to calculate. If we pull out the five-year catches, then simply the constant catch scenario is just taking -- Finding the average of that and using that.

DR. FRAZER: There's a number of different ways, and I can, you know, certainly talk with Katie afterwards, and I think she understands where we need to go.

DR. SIEGFRIED: Yes. I'm good. Thank you.

CHAIRMAN NANCE: Well, I think the key is, as long as we get the table that we got for the 30 percent -- I think we're looking for that exact same thing with the 26 percent, and let's ask this now. Is there any issue with the 75 percent being used for the difference between OFL and ABC? Okay, and so, Katie -- Harry, go ahead.

MR. BLANCHET: Thank you, Mr. Chair. For the five-year average, I have no problem. The problem that I do have is, if we are looking at a declining catch stream and we go beyond the five

years.

We, at that point, are going beyond what we would estimate to be the ABC for those particular years, and we can't make it up, like we can over the five-year period, and, over the five-year period, we had some underfishing, in the first couple of years, and we make up for it with overfishing, in the last couple of years, but then, if you go past that five years, you're now getting into your -- You've finished with your interest, and you're now getting into your principal, and so, if you do something like a five-year average, we probably should be considering something about what is year-number-six, and that probably should not be the same ABC as years-one through five, and that's all I had. Thank you.

CHAIRMAN NANCE: Perfect. I agree totally. Ryan.

MR. RINDONE: Kind of an on-air discussion about interim analyses then, and you knew that was coming, because I immediately go to model fits to fishery-independent indices and start looking at length comps, and I don't like the age-one, and I don't like the reef visual census, and I'm not wild about the SEAMAP trawl, but maybe combined video?

CHAIRMAN NANCE: Or we can just do an operational. Go ahead, Katie.

DR. SIEGFRIED: You want to do another operational for gray? There's other things that we can look at. We've got a diagnostic test that can look at the predicted value of each index that we didn't show, but we have that in the SS diagnostics, and we can take a closer look, and maybe take some of Harry's comments and take a closer look, at the representativeness of the comps by each of those surveys, if there is some issue in 2020, but we can investigate that and come up with the best index for that.

I do very much agree with Harry's comment that, if we are fishing down the principal, then it makes sense to check on that, you know, at the end of that time period, and the Center can take care of that, for sure.

CHAIRMAN NANCE: Perfect. Ryan.

MR. RINDONE: Every time I breathe on this cable, this monitor turns off. So maybe some combination of that and tracking what's going on with the shore mode, as its performance as an index of relative abundance, to keep some pulse on what we think might be going on with recruitment to the fishery, and maybe some Frankenstein analysis there might be informative.

DR. SIEGFRIED: We also have the jackknife analysis that we did, just because we enjoy that sort of thing, because we wanted to look at how each index affected the assessment, and we would use that as well, and there is some tradeoff between the age-zero and trawl, and then there was a runs test issue for combined video, and we want to reevaluate 2020, and check with Kevin and the other folks who work on that, to make sure that that index is tight in the last couple of years, if we were using it for an interim especially.

CHAIRMAN NANCE: Any other discussion on gray snapper at this time? I think we have a way forward, and, Katie, any -- I think you've got what we would like to see, but go ahead and reiterate.

DR. SIEGFRIED: There's only one other question that I have, and then I can reiterate, because it's always a great idea, right, but the interim landings that I was discussing with some folks during the break, what to use for those interim landings, and this would be a good time to nail those down, this afternoon, and I can do it offline. We don't have anything new from the Center, but, if there's different things from the monitoring -- I think I was talking to John, or Peter, and, if there's new interim landings, we would need to put those in.

CHAIRMAN NANCE: Go ahead.

MR. RINDONE: So I think we could use the preliminary landings for 2021, at this point, from the SERO ACL monitoring database. 2022, we wouldn't have the finalized Wave 6 landings for that, until the middle of next month, and so 2022 and 2023 could be estimated using 2019 to 2021, under the same general principles that we've used in the past.

I just think that, you know, given that we're in 2023 right now, and we're projecting from 2024 forward, we have, at a minimum, the preliminary landings that can be pulled off the SERO website for gray snapper, and so we should be able to use that for 2021.

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: If we've already got 2022 through Wave 5, how much do those landings fluctuate from one source to the next to the next, because, if they don't, then the only thing you're doing is just trying to adjust for Wave 6 in 2022, and you've got the most up-to-date information.

CHAIRMAN NANCE: Ryan, please.

MR. RINDONE: I think, just from a practices standpoint -- Typically, if we're going to use preliminary landings, we have generally stuck to complete years, even if we didn't think there was going to be much activity on the backend, or regardless of what activity we thought there might be on the backend, for like the last wave or two, and we've generally just stuck to complete years, and so, maybe for the sake of tradition, you know, we could certainly continue with that, and that would be an easy enough data pull, with help from the SERO folks, to the Science Center, to be able to plug that in.

CHAIRMAN NANCE: Okay, and so it sounds like, instead of the average, use 2021 as the preliminary value, and that's only used in the projection, right, and not in the model? Okay, and so that will change the 30 percent also, and we'll see a slight change in that, and then, obviously, the 26 percent would be using that new value. Katie.

DR. SIEGFRIED: So the reiteration that you requested is using what we've presented as the long-term average, for both OFL and ABC, with F 30 and F 26, with the updated interim landings from the website, but not commercial. Commercial is -- For 2021, but commercial is still acceptable to use the average that we've been using.

MR. RINDONE: Was that a question for me?

CHAIRMAN NANCE: Yes.

DR. SIEGFRIED: I just said from the website, because you had mentioned that we get the recreational landings from the website, but we don't need to update commercial landings for 2021.

MR. RINDONE: No, and you should have those already, don't you?

DR. SIEGFRIED: We don't have any interim landings for 2021.

MR. RINDONE: Well, so -- I guess the ACL website is going to have it for the stock, but it will have commercial and recreational broken out there, and I was actually in the process of pulling that up right now. Let's see.

DR. SIEGFRIED: I can just work with Ryan to get those.

MR. RINDONE: They have it marked as 2021 final in-season landings, and so, for recreational, it has 1.96 million pounds, and commercial is ninety-three-thousand-pounds-and-change, and, I

mean, I can send you the -- You can pull it up just as easy as I can, but --

CHAIRMAN NANCE: So it sounds like, for 2021, using what's online for both recreational and commercial, and so you would update both of those values.

DR. SIEGFRIED: Okay. We'll check our numbers with Ryan, if Ryan is good with that.

CHAIRMAN NANCE: Okay. Perfect. Any other changes to that from the committee? Okay. Katie and Francesca, thank you. We appreciate that, and we'll go ahead and take a fifteen-minute break. When we come back, we'll have a presentation by Dr. Siegfried on our Acceptable Biological Catch Control Rule modification. We'll go ahead and, at 2:15, have that.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: Okay. We will go ahead and reconvene, and I appreciate everybody still staying on the line, and we'll go ahead, and, with Item Number V, the SEDAR 75 review, we're going to put that off until tomorrow, and we'll be able to look at those other yield streams. We'll go ahead and move into Item Number VI, which is discussion of the Acceptable Biological Control Rule modifications, and Dr. Siegfried is here to be able to present, and I think Shannon is on the line, if I'm not mistaken, if we have any specific questions for her. Katie, I will go ahead and turn the time over to you.

DISCUSSION OF ACCEPTABLE BIOLOGICAL CONTROL RULE MODIFICATIONS

DR. SIEGFRIED: Thank you, Mr. Chair. Yes, Shannon is on the line.

MS. MATOS: (Ms. Matos' comment is not audible on the recording.)

DR. SIEGFRIED: Sorry.

CHAIRMAN NANCE: Jessica, thank you. I'm glad you're on track, and we'll go ahead and have Ryan do the scope of work for this item.

MR. RINDONE: Sure, and so Katie is going to regale you guys with some alternative approaches for the ABC Control Rule, which is used to determine the scientific uncertainty between the OFL and the ABC. You guys looked at this in May of 2021 and 2022, and this has been kind of continuing project for the SSC. Following the May 2022 meeting, you guys requested alternatives using the

Ralston approach, the Restrepo approach, and the Privitera-Johnson and Punt modifications to the Ralston approach.

The current ABC Control Rule has been around since 2011, but SSC members, and members from the Science Center, have expressed a desire to revisit it, especially due to its propensity for producing buffers, using the P* approach, that are pretty narrow between the OFL and ABC, and likely not representative of the uncertainty in the stock assessment, and so you guys will be reviewing the presentations and background materials provided, and there's been some new stuff that's put up also, and so, if you've been working off a version of the webpage, make sure to refresh that, so you can see the Free paper on there, and focus your efforts on how to revise Tier 1 of the ABC Control Rule, and you should make any revisions and recommendations to the council, as appropriate. Mr. Chair.

CHAIRMAN NANCE: Thank you. Katie.

DR. SIEGFRIED: Thank you, Mr. Chair, and thank you, Ryan. I do plan to rely heavily on Shannon's input about the previous conversations about your control rule, that I understand you've been discussing long before I was in my current position, but I am going to present to you now my initial stab at the council request, which is incomplete, if you took a look at the presentation, and it was my Christmas project, and it's a lot harder than we thought it was going to be.

I will show you a way to quantify uncertainty between and among assessments for use in setting ABC, and this is taking a look at basically, you know, the sigma min value or some alternative for P*.

This is just to show you the council request, in case you don't have it pulled up on your desktop, and Ryan just went through this, pretty much, but I just wanted to reiterate that the request was to develop the sigma min, following the Ralston approach, focusing on our data-rich stocks, and we wanted to take a look at the update to the Ralston approach that Privitera-Johnson and Punt put forward in 2020, and it does actually suggest that looking at projections, through their probability-based harvest control rules, might be a better way to incorporate scientific uncertainty, and that will be coming.

Like I said, this is incomplete for what the council was requesting, but the work, to-date, that we have accomplished is to take a look at the SS models that we have done in the Gulf, to-date, and it was an adventure to go through our servers and find

all of our files and look at the evolution of our SS models from it looks like the early 2010s to now.

Although other models could still be mined for data, the Center, in the Gulf, did actually use different modeling frameworks before they started using SS, and so we could potentially look and pull spawning stock biomass time series from those as well, but we haven't started to do that mining.

We do have an issue with the units for our biomass metric, our SSB. Whether it’s in metric tons or fecundity depends on the assessment, and we need to convert any fecundity estimates to weight, in order to have an apples-to-apples comparison for our PJ-Punt method. That’s not as -- Well, I don’t know if it sounds easy anyway, but it’s not actually easy to do across all species.

We have something from the west coast that the PJ-Punt method used, and we haven't yet determined if we just blindly use that or if we would want to alter that a little bit, but that’s a step that we haven't yet taken, and we also have one assessment that uses eggs per recruit, and so metrics tons, or fecundity directly, and we’re still considering how to incorporate assessments with structural changes, and gag is an example where we had total versus female-only SSB, and whether that’s a reasonable level of uncertainty to include, or if structural changes in the model enter different types of uncertainty than we’re trying to calculate.

The methods used, we didn’t think that we needed to present the Restrepo et al. paper, because that is commonly seen by this SSC, and we’ve used the 75 percent FMSY, or its proxy, to set the ABC repeatedly, and we showed you some today, and so we didn’t provide those in a table. We will provide those in a table when the full document is completed.

We started with the Ralston analysis, and we’re in consultation with Kristin for the projection-based estimates, and so we’ll get some expert help on that, and my team is all busy, and I’m busy, and she’s the expert on it, and so I think that will help a lot, getting her help, and then, just to reiterate, we view this as a priority, but our workload right now -- You know, we had some folks out, and it was over the holidays and all, and so it was a difficult time to make more progress on this, but we will continue to work and present the upcoming results at a future SSC meeting.

The Stock Synthesis assessments that we used were -- I will go through coastal pelagics, and the cobia, greater amberjack, and vermilion snapper, and then, in our snapper grouper complex, we had gray snapper, red grouper, and red snapper. We covered the

seven species through thirteen assessments, and so we don't have that many repeat assessments, compared to what the Ralston analysis -- I think one of his -- I think he had fourteen repeat assessments, and so it's a limited number of repeat assessments. Three species are measured in spawning stock biomass, which is weight, one in eggs per recruit, and two in eggs. It must be four species. Sorry.

CHAIRMAN NANCE: Katie, I only see six species.

DR. SIEGFRIED: Yes, and it's four species is SSB. Sorry about that.

CHAIRMAN NANCE: But I see only six, instead of seven. Am I missing something?

DR. SIEGFRIED: Well, those are the species that I've covered, and so that should be six species then, and the numbers in the last bullet is three, one, and two.

CHAIRMAN NANCE: So it's six species, as opposed to seven?

DR. SIEGFRIED: Yes.

CHAIRMAN NANCE: Okay.

DR. SIEGFRIED: Ryan.

MR. RINDONE: So vermilion snapper would be in the snapper grouper species and not pelagic.

DR. SIEGFRIED: We had -- I looked through the sort of research, to discuss like what the life history of that would be, looking at things like schooling, how far they went, and I can change it, based on management, if you would like, but I was looking more on some of the other, you know, life history characteristics.

MR. RINDONE: So like I guess that becomes a conversation, about are we going to classify it based on that or based on its harvest, because it's not something that is typically harvested as part of a directed coastal migratory pelagic trip, and I don't know if the Stephens and McCall stuff could quantitatively describe that, but just thinking about general practices, and like, if people are out fishing for cobia or Spanish or kingfish, they're not also coming back with much in the way of vermilion snapper, but, if they're fishing for mangos, red grouper, red snapper, amberjack, then they very well could come back with vermilion snapper, and so I think it's probably -- From how this is going to be applied, from a

management standpoint, I think it is probably better grouped in snapper grouper.

DR. SIEGFRIED: Okay, and so the -- We should discuss whether we want to group them as far as the uncertainty we see in the assessments, which is what the analysis is supposed to be, or whether you want to take a look at management groupings, or biology, which is the thing that I was initially looking at, and I think all three of those could be discussed.

CHAIRMAN NANCE: Thank you. Harry.

MR. BLANCHET: Thank you, Mr. Chair, and so the species that I don't see up here is king mackerel, and is that because of the lack of repeated SS assessments or what?

DR. SIEGFRIED: Thanks, Harry. Honestly, I didn't get to king mackerel, and there were issues with trying to pull the data from those SS files on the server, and this really is a quick update, or a starting point, for this, and I did actually start with gag, because we had -- Like I said in the earlier slide, we had total versus female, and I thought, well, maybe we could compare. When I tried to do the analysis, it was kind of nonsensical, and so king mackerel should be done, and it will just have to be done after this particular presentation.

MR. BLANCHET: Okay. Thank you.

DR. SIEGFRIED: Sure.

CHAIRMAN NANCE: Thank you, Katie.

DR. SIEGFRIED: Then the first thing that made sense to show is just sort of what time series we pulled from the SS files, and I know you have this in your briefing book materials, and you might want to pull it up on your screen, so you can see the small legend, but we have two cobia assessments to show here, and this is because -- I grouped these by whether they were reported in SSB or whether they were reported in fecundity or eggs per recruit, and so these six assessments for these three species were using SSB, and so we've got the cobia first assessment and second assessment, the greater amberjack first and second, and then the gray snapper first and second.

You know, I talked with Kristin a little bit about this, because the gray snapper is the highest value there, in the green, that goes out to 2020, and one of the things that we discussed is most of the second, versus first, assessments that I plotted here are

in CHTS, versus FES, right, and so we would expect all of them to have a magnitude adjustment, and I was concerned that we would be putting in -- Accounting for uncertainty if it's really just a shift in magnitude, due to the different way of accounting for effort, or calculating effort.

She said that, you know, that's part of what this method should, and her method, should -- It should account for the variability in the landings streams as well, but I just think it's something this group needs to keep in mind, that the first and second versions of each of these assessments incorporate -- They change by using different MRIP values.

This one covers the historic fecundity estimates, and this is two vermilion snapper assessments and three red snapper assessments. There are more red snapper assessments, but they are -- They were -- I need to sort of distill the server down, to be able to get the final versions of each, which is something we've talked about, and it's difficult to know what was recommended for each management action and so that's just why there is some of those missing, but I was able to find three final versions.

CHAIRMAN NANCE: Dave, please.

DR. CHAGARIS: Just a quick question on this figure, and so is the plan to convert these to a common biomass metric, because that's what was done in the Privitera and Punt.

DR. SIEGFRIED: Yes, that's the plan. For Ralston, I went ahead and just used their native units, and only compared them with each other, and then I was able -- I will show you in the methodology section, but it didn't seem like it was as much of a problem, but, yes, that's the plan for Privitera and Punt, and they used E.J. Dick's method from the west coast, but, again, I haven't looked at the conversion ratio of what -- Because rockfish -- It's E.J. Dick et al., and there's a paper that E.J. Dick put together that helped them convert eggs to biomass, and I just need to take a look at it and be confident that it's a good way to go for our species.

I'm not really sure if the rockfish were heavy in that analysis, which is going to be different from what we have on the east coast, and so this really is like a snapshot in my progress of this project.

DR. CHAGARIS: I thought they just calculated it as the numbers times weighted age.

DR. SIEGFRIED: Did they limit the age to when they were mature,

or did they --

DR. CHAGARIS: Like numbers times weighted age times maturity data.

DR. SIEGFRIED: It didn't matter what species it was or across --

DR. CHAGARIS: I was going to look at the paper now, and see if there was an oversight there, but it seemed like it was just a simple calculation of spawning biomass.

DR. SIEGFRIED: If that's what they used in the report -- She and I have a meeting, next week, or I'm messaging with her next week, to talk more about this, because, again, the holidays sort of interrupted collaboration, but that's -- I mean, if it's a simple ratio, we can definitely take care of that quickly, but I don't want to just blindly apply it, but understanding it.

DR. CHAGARIS: It's just the weight times the number at age.

DR. SIEGFRIED: Okay, and so then I would also have to add a little bit to pull the numbers -- To pull more time series out of the SS files than I have done now, and so I've only pulled out SSB and eggs, and so I just have to go back and do all of that too, and I will present that next time. Okay. Let's see.

Then this is the red grouper, one assessment versus -- The first assessment versus the second, and I think there were issues with equilibrium, initial equilibrium, if it was recruits or spawning stock biomass that Skyler found when she took over the assessment, but these are the two time series of eggs per recruit for red grouper.

Shannon has shown you this exact slide before, and I thought it would be useful to go through it again, to show you what our goal is, and so, on the left, it's all of the repeat assessments for Pacific whiting, and it would be glorious to have something like that for a species in the Southeast, but he did -- He was able to take a look at the uncertainty across all of those assessments, and there is quite a bit variability in the magnitude there, which is why I agree with Kristin that we could look at our assessments, even though there is the insertion of MRIP data that changed magnitude.

On the right, we have this aggregate distribution of our deviations pooled over all the stocks, and so this is more the shape of the uncertainty from which Ralston calculated the sigma.

There is three methods that he put in his paper that we would have

to discuss in more detail, once we have the PJ and Punt method, but I wanted to just lay them out for you here, and so the first method is that, for each estimate of biomass for your T, from assessments I and J, we would calculate this equation here, and so it's basically, you know, the measure that we're calculating for assessment I, given J and T, and so given the other assessment and the year, and we would look at the ratio of the biomass in each assessment, by year, and so this is the proportional deviation of assessment I, using assessment J as a standard, and so this is looking at the ratio of the biomass in the different assessments, each year.

Based on the symmetry argument that Ralston makes, we could also calculate the ratio for the other assessments, and so the first one is the ratio for assessment I, and the second one is the ratio for assessment J. All of the ratios are log transformed, and so we have these perfectly symmetrical ratios that would come out.

Then, for each stock under consideration, the standard deviation of the ratios is calculated, and that statistic is positively biased. However, because it is based on the ratio of two lognormal random variables, the appropriate bias correction term was derived and applied so that the corrected estimator is sigma divided by the square root of two.

We didn't have a lot of repeat assessments, and so this is actually a pretty simple calculation. It's usually just I and J, and we didn't have a lot of -- We just had red snapper with a third assessment.

The second method basically says that the mean of biomass estimates in a year is treated as the best estimate of central tendency, and then we calculate the deviation from that mean, and so, before, we were looking at biomass ratios, and now we're looking at deviations from a mean. In this approach, the variation in our biomass was measured as the square deviations from the annual mean in log space, so that we would get this mean in log space, which is just looking at the deviations from that mean of those biomass estimates.

I have the calculation for the standard deviation there, if you would like to see, but it's just a standard mean of log transformed data and then a standard deviation calculated from that mean, and it's -- The standard deviation and the means are going to be summed over the number of assessments.

The next slide for Method 3, and this is only used for red snapper. This method says that the most recent stock assessment is

considered the best estimate, and so, since I only have this one species with three, I could say, okay, the last assessment is the best one, and that should be the central tendency, and we're going to look at the deviations from that central tendency of the previous two assessments.

Then the CV that we calculate, the calculation is given for you there, and so, for those lognormally distributed random variables, the CV, on the arithmetic scale, is equal to what you see here, and so, to reiterate, because I know this is dry, the first one is biomass ratios, the second one is deviations from a central mean across the assessments, and then the third is assuming the recent assessment is the right one.

Okay, and then the last thing that we needed to do is look at between-assessment uncertainty, and so, following Ralston again, we considered two methods to do this. You either take the average of the stock-specific uncertainty across all of the assessments you have or you aggregate all of the residuals and calculate the standard deviation of the pooled set, and so you take the CVs of the sigma of everything, and we average them, or you look at the residuals, or not the actual sigma, or CV, calculations, and we calculate the standard deviations of those residuals.

The first method will give each species equal weight, and it doesn't overemphasize stocks that have been assessed more, which is not a big problem for us, because we only have species assessed twice, or three times. Conversely, the second method treats each data point as an independent observation. Neither approach is ideal, as Ralston states himself, given the lack of independence of the data. We don't -- We're not trying to say that this is perfect statistically, because each assessment depends on the other, because it's using similar data streams.

There is a little bit of difference in what each method provides, whether it's a sigma or it's a CV, and so Method 1 provides a sigma value, and Method 2 and 3 are provided as CV, because of the weight versus fecundity issue, which is -- We would convert everything to weight, and then we could have everything in the same units.

Two estimates are provided, where possible, and this is just something that I thought we might need to consider, or have you all consider, as an SSC. One of them is 1981 on, and it didn't make a lot of sense to go pre-1981, because I didn't have the same start year in all the assessments, and so I chose the 1981, which is where our recreational data come in, and we have a lot of time series come in in 1981. 1993, however, is where a lot of data got better, where we started having discards, and a lot of our data

streams became more reliable, and so I calculated the uncertainties either from 1981 to the terminal year or 1993 to the terminal year, to take a look at whether the uncertainty reduced when our data improved.

In this table, I've got Method 1 for each start year, Method 2 for each start year, and I only had one, Method 3, there for red snapper, and, in the red box, I have the totals, which we can compare with Method 1 that Ralston reports in his paper, and I broke it into coastal pelagics, which we can argue about which species are in those, and snapper grouper, and you will notice the coastal pelagics are lower -- The uncertainty is lower than the snapper grouper that we took a look at.

Between assessment uncertainty, and this is using pooled residuals to calculate the CV for our weight-only assessments. From 1981 on, the CV was 0.41, and, from 1993 on, it got a little tighter, and it's 0.39.

Then the next slide will show -- There's an update to the Ralston analysis that Privitera-Johnson and Punt provided that shows the sigma value when those data that Ralston used were extended to 2019, I believe, and it went from 0.36 to 0.403, which, if you go back to the red box, you will see our totals, for 1981 on, is 0.44, and from 1993 on is 0.48, and so it's in the same ballpark.

We're looking forward to doing the PJ and Punt method, because, from the paper, and from other discussions, we anticipate that approach will account for more uncertainty than the historical biomass approach, and then PJ and Punt approach will require more work, due to the detailed data required for the analysis, and we also may need to slightly modify the approach, due to our region's use of allocations in the projections, and that's not needed, or done, on the west coast.

Also, something that Kristin and I were working on is that some of our SS report files don't contain some necessary information, and so we may have to rerun an assessment or two to get some time series for her code.

The next slide is just asking if there's questions and letting you know that our plan is to complete our datamining exercise and then carry out the PJ and Punt projection-based method, but I'm happy to go over any questions of the Ralston method that we have provided so far.

CHAIRMAN NANCE: Thank you. That was a great summary, and a lot of work went into that, and it's greatly appreciated. We're kind

of in a quandary with MRIP. While it's giving us very different signals for biomass, I guess that is part of the uncertainty. Will.

DR. PATTERSON: Thank you, Mr. Chair. Thanks, Katie, for walking us through the analysis, and for performing the analysis, and this is something that the SSC had talked about for, you know, many years, and I'm glad that you guys were able to carve out a little bit of time to start down this road.

It's really interesting, to me, that, if you look at the Privitera-Johnson results, and especially -- So looking at spawning stock biomass, which is what we're talking about here, and there are long-term, you know, equilibrium projections, or long-term projections, twenty-five years, they have a sigma estimate of 0.36, which matches the Ralston estimate of 0.36 from their analysis of basically modeling error among their assessments.

Your preliminary overall estimate is like 0.40, here, and so they're all kind of in that same ballpark, and I wonder if you've thought about -- Like what is it that is -- So now you have three independent estimates that are all kind of converging on that same number, and like what's magic about point-fourish?

DR. SIEGFRIED: I would have to think about that a little bit more. I was thinking about it when I was doing this analysis, and I was thinking, what could I do to the assessment to make it closer to 0.5, and I was just curious, and like how -- That could be something that I do, where I take an assessment, apply a huge amount of uncertainty and throw it in the mix, to see if it gets higher, or if there is something inherent in these statistics that limits it. I am not entirely sure, and I haven't tried.

CHAIRMAN NANCE: Will, please.

DR. PATTERSON: Among the Gulf assessments you've looked at, or species, there's a pretty broad range, from 0.07 to 0.7, basically, and, you know, which is vermilion so low? That doesn't seem to be a highly-uncertain assessment, to me, especially given the variability in size-at-age.

DR. SIEGFRIED: I totally agree with that intuition, because I checked it so many times, thinking how did they get the same SSB estimates back in time, and I looked at the F init values, trying to see if there was something that was anchoring the assessment, and I haven't given myself an answer yet, but that struck me as well, and I think that might have been tamping it down just a bit, because those are not variable.

I mean, if you go back three slides, it's 0.07, 0.09, and 0.05, and it's a tiny amount of uncertainty, but we're also talking in the trillions of eggs, and so, once I convert that to weight, I'm wondering if maybe there will be more uncertainty.

CHAIRMAN NANCE: Harry.

MR. BLANCHET: Thank you, Mr. Chairman. This goes back to the comment regarding that using the two different data streams from MRIP is just part of the uncertainty, and we've also heard, from NOAA, that what we have is just two different currencies, and it seems that this is trying to take it on both sides, and you can't have it both as two different currencies and as an uncertainty, and it's either convertible and the same or it's not convertible and different, and we've been taking it as that it's convertible, all along.

My point is that, rather than looking at biomass, if we look at some relative changes, either per recruit or Fs, or something like changes in F over time, or per recruit over time, those slides that did have a comparison of two per-recruit metrics, and that's the kind of an approach, to me, that talks about what is intrinsic in the assessment process, versus what is an external change, and I would really think that that's where we want to be focusing, is on what is happening within the guts of the assessment to change our perception of the historic changes in the stock and not the perception of a point in a given year from two different assessments, but looking across Stock Assessment A, Species A, and Stock Assessment B, Species A, and are the slopes the same? Is the relative -- Is our current status relative to biomass benchmarks similar? What is the variance in your final estimate of SPR, versus what is the estimate of biomass?

If you change from MRIP-CHTS to FES, that's going to change all of the absolute numbers, but it should not change the relative numbers, and so that's a bit of a different approach, but that's just my suggestion. Thanks.

CHAIRMAN NANCE: Harry, thank you. Katie.

DR. SIEGFRIED: I have to absorb your comment a little bit, for a little while, Harry, but the -- We're looking at -- So the way that MRIP translates is in the scale of the assessment, which we see in productivity and which we see in SSB, but, if you look at the -- I think it's Slide 9, on the left-hand plot for Pacific whiting -- You know, when the historic data are configured -- I would have to look at why those assessments had such a different

magnitude to -- Some way to convince myself that the change in the magnitude of landings that was caused by MRIP-FES is not as legitimate as what they're considering there.

I think that it translates into all of the different parts of the assessment when you change the magnitude of the landings, and one of the things that we have to do is understand, if we are able to fit all of those parameters with the change in MRIP landings, you know, what is the fundamental change, and, if it's just scaling, then, yes, that level of uncertainty isn't what we actually want to see, but there is some difference in trend, and there is some change in things like selectivities that translates to those SSB, or fecundity, time series, but I think I would have to think a little bit more about whether something like exploitation would be any different, because that's also going to reflect the same time series that we're plotting here, but just in a different equation, and it would be relative to the numbers, instead of relative to the spawning stock biomass.

MR. BLANCHET: Absolutely, and I happen to agree with you on that, because there are differences, other than scaling, between the FES and the CHTS, and those absolutely should be incorporated, and should be considered, as part of the differences that we are seeing between assessments. I'm just saying the scaling of it, and we've seen these -- Yes, there is differences in year-to-year, but, overall, it's like a doubling of the recreational harvest, and that doubling of itself is not, to me, a part of that, but the differences in slope and the annual differences from the mean, absolutely.

Those changes are real changes in those assessments, and that's why I'm thinking that, if we're doing something on a per-recruit basis, that you're going to end up capturing that, without having to worry as much about that scalar. Thank you.

CHAIRMAN NANCE: Thank you, Harry. Steven Saul, please.

DR. SAUL: Thank you, Mr. Chair, and thank you, Katie, for the presentation. A couple of -- One, I really like this methodology, and it's sort of like a multi-model, or a model ensemble, type of approach towards estimating uncertainty, and that's also an area of research that I'm interested in, and pursuing at the moment, and I think that this is a really useful way of sort of trying to understand, and possibly characterize, uncertainty.

Two questions that I have, and one is would this -- Would this replace kind of the current way that we calculate uncertainty at the end of an assessment, and then translate that uncertainty to,

you know, figuring out the OFL and the ABC, et cetera, and then my second question is would it make sense to -- So it's interesting that you've applied it to kind of an entourage of past assessments modeled.

Would it make sense, in the course of an assessment, like during a SEDAR, or could you even apply this approach to the ensemble models that are put together during a given assessment, like the base model plus all the twelve, or however many sensitivity models that are developed, and would that be sort of a useful way to capture uncertainty?

DR. SIEGFRIED: That's an interesting thought. My first response to that would be that each of these assessments that Ralston used in the analysis were what was used for management, or was put forward as the final model, and I think, if you looked at the uncertainty across sensitivities, it would be giving equal weight to all of the sensitivities, when some of them may just be model exploration.

I mean, that set aside though, I think that one of the big questions that I had about this analysis is, okay, if we're going to get numbers, totals, or we get them based on pelagics, or snapper grouper, are we okay using some sort of global mean, or would it be something that we would want to do by species, if we had the information?

If we didn't have the information, then the global mean would be what we would have, but, I mean, you're sort of talking about a model-averaging thought, or going down a model-averaging thought process there, and I think that's great, but I think that's separate from what we're looking at here.

I do think we're trying to replace -- Hopefully Shannon will weigh-in if I'm mistaken, but replace the P* approach that doesn't tend to give us enough buffer, based on uncertainty, between ABC and OFL, and we've looked at the Ralston analysis before and said, well, what would it be for the Southeast, and so this is the first step of what it would be for the Southeast, and so I do think we would like to replace that sort of P* approach, but there's something that I wasn't able to reflect here, is sort of -- You know, not just the number for each individual, but sort of what the shape of that curve would look like, which is something that Ralston provided here that I have yet to calculate, which I do when I had all the species together, and those are the two components I think we would need to replace the P* approach.

CHAIRMAN NANCE: You're absolutely right, Katie, and we have a

current ABC Control Rule. We don't use it a lot, and we go to other methods, and so this is our approach to try to determine what would be a better ABC Control Rule for the Southeast. Will.

DR. PATTERSON: I mean, but, as far as the figure on the right, if your sigma is 0.408, overall, then that just makes it a little broader, right, but what -- I think Steve is -- I like the way he's thinking, about, okay, how do we make this operational, and we've talked about this for a while, and this is great, to have some preliminary estimates of what the sigma values are for Gulf assessments, and then overall, and, you know, the table that Shannon produced some time ago, and it's here, I think, in another iteration, as 6(b)(i), the Ralston multipliers, and that's using the sigma of 0.36, but you could -- You know, whatever sigma comes out of the Gulf analysis, you could have the multipliers then across the columns.

I don't think the P* approach is inherently a poor approach, and I think it's elegant, in many ways, but the problem is that -- I see there being two main problems. One is that I don't think we've ever felt satisfied that the variance in the PDF accurately, or fully, reflects uncertainty, in most cases, and the second is that we have this control rule that the tables to come up with our estimates of P* are somewhat arbitrary, right, and, I mean, we as a group -- Shannon and Joe Powers took the first cut at it, and we as a group took their strawman and massaged it until we all felt, you know, I guess -- We got it into as good shape as we could have at the time.

That's what resulted in trying to come up with a way to estimate what we thought the P* was and then apply that to the PDF, and the problem -- So the problem is we're not really comfortable with that table, and we don't think it actually does a perfect job, and so maybe get away from this trying to quantify everything down to that rigid detail, but instead come up with more of a categorical approach.

Once we have the sigma, that informs the distribution, but, instead of having to estimate a P*, and pretending like we can quantify that, just come up with a high, medium, and low, right, and so maybe a high P* would be like 0.45, which puts a lower buffer between OFL and ABC, and a medium level is 0.4, and that's kind of where most of our -- Somewhere between 0.4 and 0.3, and that's where most of our analyses come out for Tier 1 stocks, stock assessments, and then a low would be about 0.35.

You can actually, and I've already done it, go into the table here and change the sigma values and see where that gets you, and,

interestingly, for a sigma of 0.4 and a P* of 0.45, the buffer is 5 percent. Well, that gets you back to about where Ralston said it should be in his F 30 or F 40 percent -- Or reducing the FMSY to 0.75 of FMSY to get you to your target.

Then the highest value, at three-times the sigma, is a 14 percent buffer, and, again, that's in that top line, and so maybe those are, you know, data-rich, very quantitative assessments, where we think uncertainty is well captured, and then the lowest level, or the highest buffer, you could get would be 40 percent, at 0.35, and if sigma is .4.

Again, I think, instead of trying to pretend that we're accurately quantifying what that uncertainty is to get to the P*, maybe just come up with categories, however they end up being, and I just did this to look at it really quickly, but it does offer us a way forward, where we're using the data from the assessments, but we're not pushing ourselves into -- You know, contorting ourselves into trying to come up with quantitative estimates of what P* is, when we don't really believe our table, or that we're capturing everything.

CHAIRMAN NANCE: Steven Saul.

DR. SAUL: Thanks, Mr. Chair, and thanks, Will, for kind of finishing my thought stream there. That categorical approach is interesting, and I just wonder -- Yes, I agree, and I think the PDFs are often more narrow than the actual uncertainty in the assessments, and so I think, if we can find a way to combine, you know, models, or some sort of more multi-model approach, that would at least address that sort of model uncertainty, to some degree, and maybe expand out those uncertainties, and, thus, the buffer to something a little more realistic.

In your categorical kind of vision, Will, would -- I guess I'm trying to get my head around it, because I'm used to like the sort of continuous version, where you kind of get one number, and would each category kind of a certain -- Were you saying that each category would have like a percentage, or a probability, rather, associated with it?

DR. PATTERSON: Yes, but it comes from the functions from the Ralston paper, just applied to whatever the sigma is that comes out of these assessments, you know, this, analysis, meta-analysis, that Katie is embarking on, and so I just -- You know, I did it with 0.4, and the original table is 0.36, from the Ralston estimate, and you can see where it goes, but, instead of having to, you know, calculate a P* to the second decimal place, just

have the categories and say 0.45, 0.4, 0.35, and so it's still quantitative, and it relates back to that original function, those original functions, but it does -- It assigns a percentage, because, in the end, we're assigning a percentage.

DR. SAUL: Okay. Got you. That makes sense, and thanks, Katie, for the hard work on this, and sorry that that was your Christmas present.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Will, to continue that thought, because I agree with you that this is a good point of discussion here, in terms of, you know, potentially using more categorical, right, criteria to sort out our stocks, and I think this would be the next step.

If we're going to apply the Ralston et al. approach, it involves different levels of sigma, right, one, two, or three sigma, to different stocks, depending on the amount of uncertainty that we think is associated with that assessment, and so I just sent out, to Jessica, for distribution to the committee, and I have talked about this before, and this is by no means, you know, even close to ready, but I'm just trying to discuss what criteria would we use to start sorting out our stocks into different tiers, right, because, even for what we consider our Tier 1, the model-derived, right, reference points, with a quantitative assessment, we still have assessments that are very different in the way that we think uncertainty exists and is being properly captured.

Perhaps going to some of these other criteria, right, evaluating different data inputs, the quality and availability of data inputs, looking at the stock productivity metrics that are used, meaning whether we can estimate an S-R relationship or not, and then, in terms of the uncertainty, you know, other criteria there that we could start developing, and start fleshing out, to then sort out the levels of sigma that we want to assign.

A red snapper assessment would be in a different category than perhaps scamp, or greater amberjack, even though, you know, they are all coming out of assessments, quantitative assessments, and is this the kind of stuff that you had in mind, Will?

DR. PATTERSON: Yes, and so, basically, you would have two axes, right, and one would be the sigma value, as a multiplier of whatever the estimate is, and let's just say it's 0.4, and then you would have the other axis that, as the category of whatever we would decide the P* value should be, and so I threw out a proposal

for 0.45, 0.4, and 0.35, and so you would have to, on one axis, come up with a list of criteria for why you would have a multiplier of one, 1.5, and two, and so, just in the preliminary analysis that Katie has done, the highest multiplier, from the mean of those data, or those estimates, is amberjack, which is twice the mean, right, and so maybe we don't find any that are more than twice the sigma of the mean, but then you would have to have criteria then that would select the categories for P* of high, medium, and low.

Ideally, we would keep this as simple as possible, and so we could easily look at information and narrow-in, zero-in, very quickly on which category -- If it was a three-by-three matrix, you know, that would be, I think, fairly easy to accomplish.

CHAIRMAN NANCE: Okay. Shannon.

DR. SHANNON CALAY: Thanks, and so I like the way this conversation is headed. I did want to agree with Will that, you know, we're calling it P*, but P* is effectively the probability of overfishing that the council is willing to accept, and so we really ought to be calling this sigma min, or the scientific uncertainty, and the level -- You know, if we want to say -- What we were formally calling 0.4, or 0.45, for example, those can all be converted directly to multipliers, as Will was saying.

I did also want to bring up that, in the U.S. Caribbean, they're operating right now with a four-tiered control rule, and the first three tier are for data-rich, data-moderate, and data-limited stock assessments, and they have criteria for classification of the stock assessment, and they basically just expand the sigma min, and so, for data-rich, they're using a sigma min of 0.5, which is informed by Privitera-Johnson and Punt, and then they're expanding upon that sigma min as the tier -- As the quality of the data are reduced. In data-moderate, it's 1.5-times sigma min, and, in data-poor, it's two-times sigma min.

You know, I think that what you're talking about is consistent to the kind of direction that the Center supported in the Caribbean as well, but, you know, I do want to point out that, from the Center's perspective, there is value in divorcing the terminology of "P*" from "sigma min", because P*, under Magnuson, is really in the purview of the council, and it is intended to be their accepted risk of overfishing, rather than scientific uncertainty.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Right, Shannon, and, to that point, right, I mean, we could work with the council, right? No?

DR. CALAY: Yes. I mean --

DR. BARBIERI: Sorry, Shannon, and there is some group dynamics here in the room that are disturbing me.

DR. CALAY: I'm sorry. I can't tell who you're talking to.

DR. BARBIERI: I'm sorry. We are joking with each other here, but I think that we could work with the council, in terms of identifying what they believe is an acceptable risk of overfishing. I mean, this is what the Pacific Council did, like working with their Science Centers there, was really identify what they accept as a reasonable probability of overfishing to determine a P*.

With that being determined, right, in the case of the Pacific, it's 40 percent, right, and so then, really, when you apply the Ralston method, because you're using different values of sigma now, right, you're using different-sized buffers associated with that same probability of overfishing, but generating different values of ABC that I scaled by the uncertainty in the data for different stocks.

DR. CALAY: May I respond?

CHAIRMAN NANCE: Yes, please.

DR. CALAY: Thank you. Yes, it's the combination of P* and sigma min that determines the size of that buffer, and, essentially, what we did in the Caribbean, most recently, is have that conversation, essentially, with their council about appropriate ranges for P*, and so we made a gentleman's agreement with that council, for example, that they would not set P* at 0.5, because, although that is legal under Magnuson, it produces no buffer, and so it's not realistic. It's biologically implausible that there would be no scientific uncertainty.

The kind of advice that we then give to the council, in the Caribbean, is an SSC recommendation about the boundaries of appropriate P*s, and a table that shows the OFL and the ABC that are obtained from the stock assessment under that P*, and the sigma min that is -- That tier's sigma min, right, and so, if it's Tier 3, it's sigma min one, essentially, and so that's the table we put together that goes to the council, and so it is absolutely a cooperation between the Science Center, the SSC, and the council.

DR. BARBIERI: Thank you, Shannon. That makes perfect sense.

CHAIRMAN NANCE: Will.

DR. PATTERSON: Thank you, Mr. Chair. When we developed the control rule, didn't we have that discussion with the council, and the range was 0.3 to 0.5 for the risk, and so that's kind of been set already, I think.

MR. RINDONE: That's what's in the table right now, is 0.3 to 0.5.

CHAIRMAN NANCE: It certainly could be re-discussed though. I am trying to wrap my head around -- You would have a sigma min for each group of assessments, right, and then the other would be then the multipliers out for each assessment from that group, and so the snapper complex would have a different -- In theory, a different sigma min than the coastal pelagics, those types of things. Katie.

DR. SIEGFRIED: You can tell me if I'm getting in the weeds, Will, but what comes to mind, when I think of what you're proposing, is where the cutoff is between each category, because, if you look at Slide 14 of what I presented, it's from 0.72 to, you know, under 10 percent, although I would pull vermilion out until I can convert it to weight, but the Ralston analysis has -- I am just looking at it, and the categories -- In that multiplier Excel spreadsheet that Shannon provided, the categories are 0.36 and then 0.54 and then 0.72, and so we would actually have, potentially, three different categories for the six species that I showed, but how would we separate those categories, based on the Southeast stocks? Do you have any ideas about that?

DR. PATTERSON: No, and I haven't gotten that far in thinking about it, but I don't think we have to relate back to the empirical data, when trying to say where a stock is in the table, right, and I would see this as just generating the range of values estimated among the assessments in the Gulf, and then, once we have that -- I mean, we can kind of look at this and see, you know, cobia and amberjack, the type of assessments and the type of data quality and quantity that exist for those, versus red snapper.

I mean, vermilion is kind of an outlier here, and we've already talked about that, but, you know, the question is -- For something like red snapper, this shows that maybe half sigma should possibly be, you know, a possibility in the table, if sigma ends up being around 0.4.

CHAIRMAN NANCE: So, Will, what you're looking at is sigma min for one value for the entire Gulf stocks? No?

DR. PATTERSON: Yes, one median value for the entire Gulf stocks as sigma, but then, when you do an assessment, you would pick a multiplier that is, you know, either integer values, or 0.5 increments, that gets you to sigma, and then you have then the vertical would be where you are in the probability of F exceeding FMSY, to take Shannon's cue not to say P* anymore.

You would have -- You know, 50 percent would be OFL equals ABC, and then 45 percent, 30 -- 40 percent and 35 percent, maybe, as the categories, or maybe we choose something different, but, anyway, that's just a thought.

CHAIRMAN NANCE: Thank you. Luiz.

DR. BARBIERI: Well, then we would look at the criteria, right, and so each assessment that comes to us is just like -- For example, we just saw an example between SEDAR 51 and SEDAR 75, and, I mean, those two assessments, for the same species, over different timeframes, generated very different amounts of uncertainty, just because of data availability and perhaps how the analysis was conducted for both, right, and so we would go -- The same way as before, and we would go to our ABC Control Rule and put stocks into specific tier there, right, the tiers and dimensions in our existing control rule.

We would go to that checklist and say, do we have an estimated stock-recruitment relationship, so we can directly estimate MSY, yes or no, I mean, because recruitment is such an important component within the assessment, knowing -- You know, having a good relationship between stock and recruitment is very, very important. If we don't, it falls into a different tier, right, and we're using a proxy for fixing steepness, and so, likewise, we would look at all the data availability.

I mean, we would have just a checklist of things that we go through that would come up with putting them in different groups, and each group will have a multiplier, as Will suggested, to multiply the sigma min.

CHAIRMAN NANCE: Any other input from the SSC, as a body? Where do we want to -- Do we want to give any new directions to the Center, as far as what they're contemplating doing? It looks like they're going forward with this, and do we have any changes that we would like to see in what they're proposing to do?

DR. BARBIERI: Well, I will say something.

CHAIRMAN NANCE: Okay. Luiz.

DR. BARBIERI: Well, no, I don't have anything -- I mean, I just want to thank Katie, Shannon, and the Center for putting this together, and I think this was a very good discussion, and I think that they have moved forward with the application of the Ralston approach for us and given us now much more, you know, information on the potential values of sigma that we could have for our region.

I mean, this is always a question for us, when we're talking about potentially using Ralston, is 0.36 a reasonable value for us to use or not, you know, and now we have our own values for our region, and that's a big step forward, I think, already. You know, if this can be, over time, extended into the Privitera-Johnson and Punt analysis, that would be even better, but then I think what they've been putting together is giving us now more tools to start structuring our own control rule based on the different approaches that we may decide that we want to use.

CHAIRMAN NANCE: Harry.

MR. BLANCHET: Thank you, and I did have those prior comments regarding what might be more appropriate, given the changes that we've seen in the MRIP data over time, that the west coast doesn't have to deal with that kind of a change, and just to consider which of that is appropriate to be considered as part of changes in assessment versus parts of changes in currency, and I will leave it that, and so that's just me, and that's not the SSC.

CHAIRMAN NANCE: Thank you, Harry. Katie.

DR. SIEGFRIED: Just to share with the SSC that the intention -- In the Privitera-Johnson and Punt paper, there is Table 5, and I couldn't find where in the briefing book this paper was, or if it was a previous briefing book, but this Table 5 of the paper -- What Kristin and I will do is try to recreate this paper with a projection-based approach, and there's deterministic and stochastic, with different projection timelines, with OFL or the spawning biomass projections.

I will finish up the assessment mining, complete the Ralston analysis, and write-up a report, similar to this paper, and maybe I could write a paper, that contains, you know, our historic biomass approach, so that we could get something that's like a Gulf sigma min. Of course, you all would continue to discuss that, whether you would want to adopt a Gulf sigma min or whether you wanted some finer scale on it, you know species-by-species, by grouping, but one of the things, and this was just me, and I didn't know if it was appropriate, was the calculation of each method

from 1981, versus 1993, on.

I see that a lot, in the assessments, where we see a big change in the data quality there, and so it was just my intuition that there would be a reduction of uncertainty in the 1993 on time period, and is that valuable? Do you want to see both? Do you think it should just be one?

CHAIRMAN NANCE: I like it being presented.

DR. SIEGFRIED: Okay.

CHAIRMAN NANCE: Because I think it gives a good avenue of having all the data and then having where we consider it more appropriate data, those types of things, and you can see that it doesn't change a lot, and coastal pelagics is the same, and it's interesting that totals got worse, the better the data, but, you know, those types of things, and so, anyway, I liked it.

DR. SIEGFRIED: Okay. We can continue that approach, and so that's the plan, and I know March is full, which doesn't hurt my feelings, but I can work with Ryan on when to finish this and present.

MR. RINDONE: We're going to have a special meeting in February.

DR. SIEGFRIED: I am going to be on vacation.

MR. RINDONE: Francesca, guess what? No, but, right now, I have it on the May agenda, and so, right now, it's looking like the week of May 1, sometime in there.

CHAIRMAN NANCE: Doug, please.

MR. GREGORY: Thank you. I'm a little surprised that you went back to 1981, and what assessment did you find, because we didn't start getting dockside data until 1985, and our first assessment, I thought, was red snapper in 1986, and so I'm very questionable about any method that goes back to 1981. The data, the recreational data, go back to 1981, and the commercial data goes back further, but the stock assessments don't, as far as I can remember, and I may be getting senile, because that was a long time ago, but I came onboard in 1984, and king mackerel was the only assessment that had been done at that point in time, I think.

DR. SIEGFRIED: Sorry, Doug, and I was having a slight side conversation, and so I might have missed a little of what you said, but a lot of our assessments go back to 1950, at least, which, on Slide 6 of my presentation, shows the two cobia, two amberjack,

and two gray snapper that go back at least that far, and I think cobia and gray snapper actually go back to 1945, but I agree that the data are not -- I didn't calculate the uncertainty all the way back, which is not the way that Ralston put it forward.

I did calculate the 1981 on, and the 1993 on, because I knew -- I mean, I was thinking of when data came onboard, and so, of course, we have our MRIP come onboard, and our commercial is already available, and so that's the first time period where we have landings reported for all of our major fleets, and then 1993 I thought would be discards, and some of our compositions become better, but that's why I brought it up, is it's -- We're open for interpretation, but our assessments definitely go back that far, and I was just thinking of when data --

CHAIRMAN NANCE: It's not when the assessment was done.

MR. GREGORY: Yes, exactly.

CHAIRMAN NANCE: It's what data was used in the assessment.

DR. SIEGFRIED: That's right. It's the time series in the assessment.

CHAIRMAN NANCE: So it's not when it was done, Doug. It's not an assessment done in 1981, but I's the data that's being used in that assessment.

MR. GREGORY: I see now. I certainly wouldn't have much confidence in the estimates of biomass going back in the 1950s and 1960s and 1970s, based on the assessments done in 1986 and 1990 and onward, but that's just me. Okay. Thank you.

CHAIRMAN NANCE: You're welcome, and thanks for bringing that up. Katie.

DR. SIEGFRIED: Yes, and that's why I focused on 1981 on, and I have the same feeling that Doug did about that, and I am happy to report both ways. We can also consider, when we do the projection approach, which years we project from, because, if I go back to even more assessments that have terminal years say before 2010, we'll have to reconsider which projection years we use, but I will show that when I have completed the analysis.

MR. GREGORY: I apologize for misunderstanding it, and I really appreciate all the work that the Center does, and the assessments are tremendous, and this effort has been tremendous as well, and I don't envy what you're trying to do.

DR. SIEGFRIED: Thanks, Doug.

CHAIRMAN NANCE: Katie, thank you for being here and presenting that. I can't think of anything, for this meeting, unless someone has a way to move forward on things, but I want to have -- To continue with this analysis, and so I think, in May, when we see the other part -- Please be thinking of, once we see that, how we can incorporate those sigma values into what we're trying to do for our ABC Control Rule.

I think we're certainly making progress on it, and it's interesting, Will, what you pointed out. I mean, they're all kind of gathering around the same point, and we kind of need to explore that, and is it like M equals 0.2? I mean, we don't want to go there, but we want to stay with looking at these assessments and being able to come up with some good values, and so thank you.

Now, young man, I think we can go -- Should we go to red grouper? Do we have time for that? I am just trying to think of -- We've got about forty-five minutes left, but do we want to move on to -- I don't want to do any calibration today, and I was thinking about having Trevor do his, but -- I'm just kidding. I want to do all the calibrations together, and I think that's the more appropriate way to do it, and so, tomorrow, we're going to do calibrations. We have the -- Let's see, we have the red grouper interim analysis and projections, and we can probably do that. Let's go ahead and do that, and then we can have public comment after that. We may not get done, but --

DR. SIEGFRIED: I can speak really quickly, too.

CHAIRMAN NANCE: I think go ahead.

DR. SIEGFRIED: I think it will be just fine to present, and, if there's discussion, that might need to be at another time, but Skyler has put together a nice presentation that you've all seen a version of, and so I think it will actually be pretty quick.

CHAIRMAN NANCE: I think that's what we'll do, and, if we go over, if we have to do some more discussion later, that's great, but I think let's do the presentation. Ryan, if you could give us the scope of work for the red grouper, please.

REVIEW OF GULF RED GROUPER INTERIM ANALYSIS AND PROJECTIONS

MR. RINDONE: Katie is going to speak real fast about red grouper, Mr. Chair. We've been having these interim analyses come annually,

from the Science Center, about red grouper. The last one was kind of a health check. The one before that, you guys recommended updated catch advice to the council. The catch limit were subsequently increased, following the 2021 interim analysis. Things for the red grouper stock have generally been looking like they've been improving since SEDAR 61, and Katie will detail what things look like at the moment.

CHAIRMAN NANCE: Okay.

DR. SIEGFRIED: I did want to mention something that one of our researchers brought to my attention about the ongoing impacts of the 2020 red tide, and I just want to read this, really quick. The short version is that, from the Research Vessel Walton Smith cruises in October and December off of southwest Florida, there was no evidence of a hypoxia, and they did observe some fish kills, but smaller fish, and not in great quantities.

One of the collaborators just sent back some sampling, just off of Sanibel-Captiva, from January 8, and they did not observe any hypoxia, several miles off the beach. That's just to provide more information about what sort of is out there on the water about the 2022 red tide.

For the -- The last time that I -- I think I went over this for Skyler too, when she was on leave, and the catch advice was adjusted in 2021, and I went over it in 2022, when it was a health check. In 2021, it was adjusted, using the index-based harvest control rule and a three-year moving average of the NMFS bottom longline survey index of abundance.

There was a reduced spatial area index used to reflect the survey coverage in 2020, and then the framework action set the ABC to 4.96 million pounds. In 2022, we just used it as a health check, and we did not propose adjusted catch advice.

For this analysis, we are producing the actual catch advice, rather than just using it as a health check, because Ryan said so. It's adjusted using the index-based harvest control rule, and she presents here both a three and a five-year moving average of that survey, which is standard when we're providing you with this information, so that the SSC can make a decision of which moving average to use, and there's the recent mean index, in the left-blue box, and then on the right is the reference mean index, and so this is looking at the ratio of the recent years to the reference time period, when that average is taken.

The reference year is set to 2018, and this is the first year

following the terminal year of the assessment, and, in that reference year, it's 5.57 million pounds gutted weight is the calculated reference catch.

The updated bottom longline index is on the next slide, and the index is shown for the entire eastern Gulf, and the red line is our -- It's the SEDAR 61 standard index, and then the blue is the updated, and I believe Adam Pollock provides this, and thank you, and the index update. The reduced spatial coverage, in 2020, led to more optimistic index values being developed. When the entire sampled area was provided, the higher abundance in 2021 is evident, but it drops in 2022.

If the ABC is adjusted using a three-year average, and this is what Skyler has produced for you here, and this average is excluding 2020, and so you have your index reference value, which is 0.6, in comparison to the recent year and the ratio, and you can see the two lines, either dashed, dotted, or solid, that show that three-year reference, or recent index values, and that's, again, excluding 2020, and so that value, in reference to your Cref, is 6.58, or 6.45 million pounds gutted weight if you exclude 2020 from the recent mean, which is what's recommended.

This is the same calculations as on the previous slide, but using the five-year average, and so it's based on -- You've all talked about this before, but it's just based on how long of an index average you want to take into account when comparing it to the recent values, and so, if you take a five-year average, the adjusted catch goes to 5.75 million pounds gutted weight, or 5.49 if you exclude 2020 from the recent mean.

She has just summarized it here for you, and the decisions that are needed are whether you are going to recommend a three or five-year recent average and then whether to include or exclude that 2020 value in the recent mean, and here's the matrix of possibilities, based on your two decision points.

When she created this presentation, this is what was available, that there is an unknown impact of the ongoing 2022 red tide, and the information that I just got today is from the water that says they didn't capture any hypoxia offshore, and so I would infer, you know, that there's not a big need to take into account a strong 2022 red tide from that, but, you know, we have Dave, and others, here that are very involved in that modeling, and so there could be more of a discussion, but this is in your presentation, if you wanted to take a look at what Skyler posted here for you, on the FWC website, and they're updated frequently.

We always to tell you that we would like to do MSEs for all of these species, so that we think our interims are ground-truthed and tested, and we would like to do that as we have time, and that effort could be used to compare harvest control rules that best achieve your council's management goals.

We would like to design, or could potentially design, a multitude of harvest control rules, with stakeholder input, for that MSE and then test the combinations of indices and harvest controls to optimize -- To identify optimum harvest control rules based on the index, and I think that's it for you, and so, if you want to go back to Slide -- The matrix. This is the summary of the decision points that you have and then the catch advice, based on what decisions you make. Thank you.

CHAIRMAN NANCE: Thank you. I always look forward to the red grouper interim assessments, and I'm glad we're doing it that way. Anyway, I spent some time looking at this, and it looks like, from 2014, it just kind of bounces back and forth along that average, and so you have some higher, and some lower, but nothing really out of the bounds, and so, from my thinking, I would think a five-year average would be a lot better representation of the long-term of what this species is being fished at, as opposed to the last couple of years, which gives, I think, a different kind of picture, but that's my own -- When I was looking at that. David.

DR. GRIFFITH: Thank you, Mr. Chair. The IFQ went in in 2010, right, and so what happened right after the IFQ went in there? Can you tell me that?

DR. SIEGFRIED: This is -- I haven't gone through that hypothesis in my brain, but this is going to be from the bottom longline, and so you're asking why it is high in 2011, and drops a little in 2012, and then drops precipitously in the following year, and I'm not sure. I would have to look into that a little bit and answer you. Does anybody else know that was part of the red grouper assessment process?

MR. GREGORY: Mr. Chair, can I speak on that?

CHAIRMAN NANCE: Yes. Doug, please.

MR. GREGORY: I think that coincides with the discussions about closing the longline fishery offshore, due to turtle bycatch, and I don't know when that went into effect, if that was 2011 or 2012, and I don't know why that would cause a big increase in catches, unless it was because the fishermen saw something coming and they went out and it increased their effort, but I doubt there's data

to that effect, but that's the only thing I can think of that happened along those times, other than the Deepwater Horizon, which I wouldn't think would have that effect, unless it aggregated the fish in some way. Thank you.

CHAIRMAN NANCE: I don't know. John, did you have anything on that?

DR. FROESCHKE: Not on that, but something else.

CHAIRMAN NANCE: Okay. Go ahead then, John.

DR. FROESCHKE: A couple of questions. On the three-year averages for the ABC, those values are above what is the current OFL, and so, if we were to go with that, would we need OFL recommendations as well, and is that something that can be done quite quickly?

DR. SIEGFRIED: We haven't produced those for interim, but --

DR. FROESCHKE: We did last time.

DR. SIEGFRIED: Can I just get back to you, so that I don't misspeak for Skyler? Thank you.

DR. FROESCHKE: Yes, and I was just asking, because, the last framework action we did, we actually did raise the OFL and the ABC.

DR. SIEGFRIED: I don't think it's a problem, but I just don't want to speak for Skyler.

DR. FROESCHKE: Okay, and then just a comment. The only thing that stuck out to me, looking at the landings, or the indexes, is the terminal year is actually below what the value of the terminal year of the assessment, and so I would be curious to see, if you apply like a three-year average, beginning at the 2018, 2017, and 2016, when we sort of have a good idea of what the biomass was, if it's below what we think it is now, based on those averages, and I suspect it might be.

DR. SIEGFRIED: So taking the average period back to actual years of data, instead of just the terminal year extended?

DR. FROESCHKE: Yes, and just if you sort of applied the same sort of interim analysis to the last three years of the index value when you did an assessment, and it kind of just struck me that if we would be raising catch in a period when it seems like the index value alone is below the period of which we thought that the stock

was not, you know, in particularly good shape.

DR. SIEGFRIED: That's a good reason to use a longer-term average, potentially.

CHAIRMAN NANCE: Okay. Let's go back to that one table below, Jessica. There we go. Any recommendations? I would like to hear -- We need to discuss whether we want to go with a three-year or five-year average and whether we want to have 2020 included or not included. Is there discussion on those? Luiz, please.

DR. BARBIERI: Just to get the conversation started, and thank you, Mr. Chairman. I mean, reading through the documentation, the paper on this, and then listening to the presentation, I do feel that there is enough justification to not use 2020, just because, when you look at the distributional range of red grouper landings over time, you know, 2020 missed a big portion of that. I mean, whether -- It's still picking up the signal, in terms of index of abundance or not, but a big chunk of the area wasn't covered in 2020, and so, to me, removing 2020 makes sense.

Just because it's an interim analysis, you know, I feel that using the three-year recent average is more reflective of recent trends, which is what we're trying to do here, is adjust catch advice for recent trends in between assessments.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Katie, I'm sure you said this, and I missed it, but, if you exclude the 2020 value, then what years are used in say the three-year? Do you replace it with another year, or --

DR. SIEGFRIED: I would have to double-check in her document, but it just says "excluded", and it doesn't say it goes back to --

DR. CRABTREE: So it would really just be a two-year average.

DR. SIEGFRIED: I need to check the document, just in case I'm wrong.

CHAIRMAN NANCE: It looks like, for the three-year average, it's simply 2021 and 2022, whereas the other one is -- Then the other one is -- I'm not sure where they start on it, but 2016 is --

DR. CRABTREE: Anyway, it would then be really a two-year average, I guess, and I kind of had the same thought as Luiz, that, with the interim assessments, we're trying to get the most recent view of what's going on, and that would lean towards the three-year

average, but I don't have -- Then, if you -- When you drop 2020, if you replace it with 2019, then you would be back to averaging three years, and that would pull it down, because 2019 looks like it was lower, but I'm not suggesting that we do that.

CHAIRMAN NANCE: Doug.

MR. GREGORY: Thank you. It would be nice to know if 2019 is a part of that three-year average, if you drop 2020, because that's important. I agree with what was said about using the most recent years, because what we're looking at is a moving average. If we're going to have an interim analysis every year, unless there's an anomalous situation, like we had with 2020, a five-year average is not going to change much from year to year, which begs the question of why we're doing interims every year, and so that, to me, argues for a more recent average.

Then we run into the OFL question, and I'm still bothered by the interim analysis projecting ABC, rather than projecting OFL, and it certainly simplifies things for us, and we don't have to argue about what the uncertainty is, but, to me, that's the appropriate way to go, and the only other comment I will make is that it would be nice to see arrow bars on those indices, so that we don't get misled into a one-year reduction, or increase, and they're probably not any different, significantly, at all, like Dr. Nance said in the beginning of this whole conversation. Those five years look like an average, and it's all the same, and there is very little variability there. Thank you.

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

MR. RINDONE: In the report, in Table 2b, Skyler talks about the values that are used, and so she says that, when 2020 is excluded, the recent index value was the average of the index values for 2021 and 2022, for what is represented as the three-year average, or 2018 and 2019 and 2021 and 2022 for the five-year average.

CHAIRMAN NANCE: Ryan is very fast on these things, and so, basically, the five-year average -- If you exclude 2020, it's a four-year average, and the three-year average, if you exclude 2020, becomes a two-year average, but I am being swayed more towards the more recent time period, because it's -- You know, if we're looking at this interim analysis as we're going it every year, and we're able to make decisions based on the most current timeframe, and so, instead of looking at the five-year, the three-year looks from a standpoint of what's happening, for me now. Steven.

DR. SCYPHERS: Thank you, Mr. Chair. I'm not falling on one side

very strongly either way yet, but I did appreciate some of the discussion, towards the end of the document, that talked about that stakeholders want stability, and it kind of leans towards the five-year average as buffering against dramatic swings one way or the other, and so to make the case that stakeholders really don't want shifts more than 20 percent in one way, and, if I'm interpreting it right, it seems like the five, or the five minus one, or four, would buffer against that more, and so that makes me lean a little bit more towards the longer time series.

CHAIRMAN NANCE: Thank you. David.

DR. CHAGARIS: Thank you. I guess Doug's comment about error bars kind of made me think about something else, and so, if we had these error bars up there, and there's no significant change in the index, should we be adjusting the catch at all? I mean, should we have some option, in this interim analysis, to say no change required? It's sort of rhetorical, but -- It kind of complements what Steven just said, as far as stability, and we don't necessarily need to chase every little up and down in the index, I don't think.

CHAIRMAN NANCE: So we have the opportunity to do that. Like you're saying, we don't have to. Roy.

DR. CRABTREE: You know, the idea of stakeholders want stability in the fishery and all that, that is fine, but, to me, that's a decision for the council to make. That's a management call, and ours is to give the council here's the assessment analysis we got, and here's what it shows, and you can raise it up to this if you want to, and the council can choose to leave it alone, or they could choose to go lower, for the sake of stability, but I don't really feel like that's a science call, so much.

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

DR. BARBIERI: Well, then, to that point too, which I understand, right, that stakeholders would like to have more stability, and, well, then why ask the Center to put time into doing interim analyses, just to wait until the next assessment?

If the council is asking for this interim analysis, to be able to update catch advice -- I mean, it's counterintuitive that that would go with the stability, and then another comment, real fast, is like, if we do have -- For the Cref, if we have a multiplier that uses the two-year average, right, how are we estimating the Yref, the reference year? It looks like that's just the year 2017 value. Is that right, Katie? Is that correct?

DR. SIEGFRIED: Isn't it 2018? Let me look.

DR. BARBIERI: It's page 3 of the presentation, on the bottom. The question is there's a reference year, right, and --

MR. RINDONE: So it's 2017 to 2019 for the three-year period and 2015 to 2019 for the five-year period.

DR. BARBIERI: Okay, and so the Cref is -- That's the value that's coming out --

MR. RINDONE: Based on 2018, following the terminal year of the model.

DR. BARBIERI: Of the assessment, right, and so that value is unchanged.

CHAIRMAN NANCE: That's correct.

DR. BARBIERI: It represents that one value.

MR. RINDONE: Right.

CHAIRMAN NANCE: It's reference value.

DR. BARBIERI: Right, and so what I'm saying is like we don't know what the actual uncertainty with that value is, right, explicitly.

CHAIRMAN NANCE: What now?

DR. BARBIERI: To me -- Here's the point. To me, whether we have three years, or two years, for the average, it wouldn't make much of a difference.

CHAIRMAN NANCE: If you're comparing it to the reference value.

MR. RINDONE: Not to the reference value, no.

CHAIRMAN NANCE: The reference value is -- That's unchanged, and it's what was -- Basically, it's 2018, 2017, forward, and so --

DR. BARBIERI: I understand, but I'm just trying to discuss like our idea of whether, you know, an average of two is so much more inferior than an average of three numbers.

MR. RINDONE: Not with respect to the reference. The reference value is not influenced by the inclusion or exclusion of 2020 in

the projected value.

DR. BARBIERI: No, and I understand that, and it represents one value.

CHAIRMAN NANCE: No. I think it's --

DR. BARBIERI: It is one value. It is one number, and so, statistically, there is no mean, and there is no standard deviation, and it's one observation, right?

CHAIRMAN NANCE: Okay. Katie.

DR. SIEGFRIED: You could consider that, the further away you get from the terminal year, the longer average you might want to consider, because you're not -- There's been more time between the terminal year and this last year of the index that you're using to monitor the stock, and so there could have been some adjustments in there that the reference point may not have taken into account, and we don't want to propose doing interims for a really, really long time in between assessments.

Then the other point that I was going to make is I think, instead of whether it's inferior or not, the two versus three years, I think it's how quickly, or how much, you want to respond to the movement of the index, and so, if it's two years, then you're going to be more touchy with how much you're responding to it, and you're going to take into account fewer years to respond to, and so it could be quite a big change from the reference, as opposed to a longer timeframe that you're taking an average.

DR. BARBIERI: I completely agree, but the issue here is then to discuss why are we conducting -- We're committing Center resources, valuable Center resources, towards updating and providing what's called an interim assessment, which is supposed to be responsive to short-term adjustments to catch advice in between assessments, so that we know that there is a whole variety of uncertainties that we're not being able to account for, because it's index-based catch advice.

CHAIRMAN NANCE: Let me throw this out there, Luiz. The catch reference of 5.57 is the average of 2016, 2017, and 2018, three years, and so it's not just one point.

DR. BARBIERI: I see. I missed that.

CHAIRMAN NANCE: That's what I'm looking at, is in the -- If you look at -- Can you bring up, on the presentation, Jessica, adjust

ABC using three-year average, and see the line? So it's 2016, 2017, and 2018, against 2020, 2021, and 2022. That's what I am looking at. Is that correct, Katie?

DR. SIEGFRIED: The Cref, I -- The Cref is going to be based on -- I don't see the 2016, 2017, and 2018. The terminal year of the assessment is 2017, and so I think the first year of calculated, based on the index, is 2018, and I don't know about the average, and I will have to look.

MR. RINDONE: Cref is not the ABC.

DR. SIEGFRIED: Cref is not based on multiple years. It was the ABC estimate out of all of the initial work.

CHAIRMAN NANCE: Okay. I stand corrected, and I'm sorry.

DR. BARBIERI: Just to put a final -- I mean, I'm not trying to shoot down the methodology. I mean, this is supposed to be, you know, an easy way to use an index-based approach to update -- I am just saying that, sometimes, we get into these long discussions, right, about detailed statistical rigor about data that's already set up, and a methodology that's already fairly coarse, right, and it's not really getting to that level of detail, in my view.

CHAIRMAN NANCE: Ryan, please.

MR. RINDONE: To that point, the council requested these annual interim analyses after SEDAR 61, when red grouper came by in not so great shape, like almost bad shape, and knowing that red grouper is particularly susceptible to episodic mortality from red tide, and so that's why you guys continually see these things, is it's a standing council request.

If you guys don't think that these are useful, you can certainly recommend, after this, that the council consider the frequency with which it's having the Center produce, and the SSC review, these interim analyses, and, you know, maybe push it out to every other year, or something like that, and you guys can certainly recommend anything like that that you want to.

Like Katie had started to allude to, and Luiz has mentioned, these interim analyses don't update anything to do with growth, life history, reproduction, recruitment, anything like that. All that stuff is inferred as constant from the last stock assessment, which had a terminal year of 2017.

Since then, on the water, we've seen a large number of smaller red

grouper, and so there's presumably -- Hopefully there's been some kind of a recruitment event that has come through, and that would seem reasonable, based on anecdotal information from the fishermen that we've heard, but, to quantitatively demonstrate that, of course, we need to do an assessment, which we aren't scheduled to do until next year.

In the meantime, the best way we have to keep the pulse on what's going on with red grouper is the interim analysis, and that requires making some cognizant sacrifices, as far as the amount of information that's included when we're recommending adjustments to catch.

CHAIRMAN NANCE: So, basically, it's been almost five years since the assessment, and we're using an index to kind of see where this stock is at, so that we can, in theory, make adjustments to catch based on what we're seeing for these last years, and so we have the option of using a five-year average, or using a three-year average, to make recommendations of change, or recommend not to change, and we have that option, too.

The discussion has been very good about whether we want to throw out 2020, and we need to move and see whether we want to use any of the averages, or are we comfortable with the fishery, of where it's at, and so I guess, right now, it's 5.57, and is that the -- What is it right now?

MR. RINDONE: 4.96 million pounds gutted weight is the current stock ABC, and so any of the options presented would increase the ABC from where it is currently.

CHAIRMAN NANCE: Roy, please.

DR. CRABTREE: Well, I mean, to me, the council asked for the interim assessment, and so we should give them catch advice. There is not a strong trend here. I mean, it looked like it was going up, and then, in the final year, it came back down a little bit, but where I'm struggling, a little bit, is how to deal with the uncertainty in this.

I mean, we've got ABC advice here, but I don't have a sense for how far below the OFL is this, because I don't know what the OFL is right now, or, if an OFL can come out of this analysis, and give us an updated OFL, and it does make sense, to me, that, given this is an interim analysis, and we're pretty far out from the terminal year of the assessment, the uncertainty is growing, and so there's a strong rationale for why we should put in a larger buffer for uncertainty here than we did when we set the ABC out of

the assessment, but I don't know what the buffer we used when we set the ABC out of the assessment up.

I mean, I think we ought to use this, and I'm sort of inclined towards the three-year, excluding 2020, but I think we need to think through the issue of -- I am not sold on these ABCs, necessarily, because I don't understand how they're incorporating uncertainty away from the OFL.

CHAIRMAN NANCE: Luiz, please.

DR. BARBIERI: Just to continue that thought, because I think that's a very good comment, and so, you know, perhaps this approach, right, the interim analysis approach, is useful, over a time interval, that we consider that, within the interval, the MSY, right, being equivalent to OFL is not really able to change too much, and so there is a little fluctuation there in the abundance, and we're adjusting the catch advice currently, but not necessarily needing to change OFL, because that hasn't changed.

DR. CRABTREE: Well, but if could, Luiz, if you had a stronger trend here, the ABC could easily be higher than the OFL was, and so you would have to be able to do something to --

DR. BARBIERI: Right, and this is what John brought up, that I think that the OFL here might be below, right, where the ABC, right, is. This might be an indication that we may be beyond, you know, the ability of the interim analysis to be used for management advice, and I'm just raising the question.

CHAIRMAN NANCE: Do you have the OFL, Ryan? Okay. Good. Will.

DR. PATTERSON: Maybe one way to think about this is so estimated the OFL, and it is what it is, and we're not re-estimating it here, and the ABC is being adjusted based on this interim analysis, and so what we're basically saying is we're reducing the buffer from our original -- That was the original OFL to ABC, because we have information that says the stock is doing better, and maybe it's only a slight amount, but we're basically saying that we projected it to be at this level, and, if catch was at this level, it wouldn't be overfishing, but, you know, based on this interim analysis, it suggests that the stock has recovered, to a certain extent, and so we can now reduce that buffer, a little bit, between the OFL and the ABC, because, in effect, that's what is happening.

CHAIRMAN NANCE: What is the current OFL, Ryan, on the books?

MR. RINDONE: 5.99 million pounds gutted weight, and the ABC is

4.96 million pounds gutted weight, and these are all in -- This is in MRIP-FES data currency.

CHAIRMAN NANCE: So, basically, we've got -- I don't know what the buffer is, 75 percent or something like that, but, anyway, it's 5.9, and then it's 4.96.

MR. RINDONE: It's about 17 percent.

DR. BARBIERI: So OFL is five-point-what?

MR. RINDONE: 5.99 for the OFL and 4.96 for the ABC, and it's about 17.2 percent.

DR. BARBIERI: So, I mean, in a way, I think that the only practical way to do what Roy is suggesting is to say, okay, the council asked us for management advice, and, if we go ahead with this, we cannot use the three-year average, because we would have an ABC that exceeds the OFL, and so that would, by itself, say that we make two choices here between using 2020 or not, and we can only use the five-year average.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: So the OFL was updated for the 2021 interim analysis, and so --

CHAIRMAN NANCE: The OFL was?

MR. RINDONE: Yes, and so, pending this information from the Science Center, that may be an option for you guys.

DR. CRABTREE: Because, I mean, essentially, the interim analysis is taking the index, and it's scaling up the ABC, based on the index, and, well, clearly, you can scale up the OFL, based on the index, as well, and so I'm sure it's doable, and the problem with just saying, okay, well, we just give them a higher catch level, based on the five-year table of the OFL, okay, but now we're reducing the amount of buffer below the OFL, which is effectively saying that our uncertainty now is lower than it was, and that seems counterintuitive, but, Katie, I see you --

CHAIRMAN NANCE: Katie.

DR. SIEGFRIED: Thank you, Mr. Chair, and so the reason that the OFL was updated for the 2021 interim is because the mean weight estimates were adjusted, and that's not -- We don't normally produce OFL for interims, and I think part of the problem is it's

a little bit of a slippery slope of not assessing and just -- We could like forever give new OFLs, but, I mean, it's possible, but it would basically just be using Cref as OFL, as sort of this back-of-the-envelope calculation kind of thing, but, I mean, it is possible, but I just wanted to give you the background of why that happened for the 2021 interim.

CHAIRMAN NANCE: I remember the 2021 now, and, basically, it was changing how things were done, and so that's why. Harry, please.

MR. BLANCHET: Thank you, Mr. Chairman. I was just -- Doug had earlier asked a question about the confidence limits around the index, and those actually are in Figure 2 of the report, and that -- Just looking at those confidence limits, to me, the primary benefit of the interim analysis is that you are making sure, for something like what Ryan so eloquently commented on, this stock, that is capable of rapid changes in biomass, is either exploding or falling off the cliff. It's the health check part of the interim analysis.

The adjustments to the harvest level -- As we get further and further out from the assessment, I feel more and more uncomfortable with doing a one-for-one change in the harvest level, based on a single index, rather than a full stock assessment. That's all.

CHAIRMAN NANCE: Harry, thank you. Doug, please.

MR. GREGORY: I pass.

CHAIRMAN NANCE: Okay. John.

MR. MARESKA: Thank you. Just looking at the index itself, and it's below the standard, it really doesn't give me much motivation to make any changes, and then I have a question, in regard to Figure 1 of the document, and so, for the recreational sector, the past two years, it looks like the percent of the quota has doubled, in the past two years, to the point that they're 200 percent of the recreational quota, and is there a payback that's going to be required?

CHAIRMAN NANCE: We're going to bring that up on the screen, John, so we can all take a look at what you're seeing.

MR. MARESKA: It's page 10 of the PDF, the figure there in the bottom-right. I assume that's the recreational, and the Y-axis is the percent of the quota landed, and it looks like, in the past two years, the recreational has landed almost 200 percent of the recreational quota, and so, if that's the case, I am definitely in

the camp of not making any recommendations to the OFL or the ABC.

CHAIRMAN NANCE: Thank you. Katie, is that accurate, what John is -- It sure appears that way.

DR. SIEGFRIED: This information was taken from the SERO website, according to Skyler.

CHAIRMAN NANCE: Peter, does that graph represent -- In Figure 1 in the report, the question is being asked of whether, in 2021 and 2022, that the recreational component was two-times the allocated catch.

MR. PETER HOOD: I was just taking a look at it, and so, in CHTS units, in -- Anyway, when we project like closures and stuff, we take what waves we can from that year, and then we kind of grab what has happened in previous years, and we try to guesstimate what's going to happen during a wave, and, in 2021, we had I think about half-a-million pounds or so that were landed in Wave 3 in CHTS units.

Last year, when we did our projections, we were looking at, you know, anywhere from July to the end of September closure, which is why we picked August 30, and then, as it turns out, Wave 3 was a lot higher, and it was 1.8 million pounds, in CHTS units, but that's -- You know, there's about a two-to-one ratio between FES and CHTS. That means that the recreational sector caught a lot more fish than we anticipated, and so that's why we went over.

CHAIRMAN NANCE: Thank you. Andy, please.

MR. ANDY STRELCHECK: Just to kind of further clarify, in 2021, we did have an overage, and someone asked about a payback. We don't have a payback, where the quota gets reduced the next year, but we do adjust the fishing season. As Peter was just mentioning, we use prior years as kind of a basis to then project the season length, and we closed on August 30 of this year, and we had a very large wave of landings in the July-August timeframe, in addition to the May-June timeframe, and so those estimates are correct, in terms of having some significant overages, and we'll have to continue to adjust management accordingly, to address these overages.

CHAIRMAN NANCE: Thank you very much. Carrie, please.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair, and so the interim analysis, in my mind, is a great tool that the Science Center has helped us with, and I think it's a great tool that we

can use in between assessments. Red grouper is kind of the first stock we've been able to use this with as much as we have, and we cannot currently implement catch level changes, and let's say that you made recommendations at this meeting, probably until August or September.

To me, this tool gives us an idea of what's going on on the water. We know this stock is very susceptible to red tide, and fishermen are telling us that they're seeing more recruits, and the landings are increasing, and this tells us -- It gives a little idea about what's going on, and, if the SSC is comfortable, and the council wants to move forward with considering catch level advice, I think this is a great tool to do that, because it is taking us so long to get a lot of these assessments.

Again, we can look at this next year, but we won't be able to probably implement any catch level changes, and let's say you act upon it at this meeting, until probably August or September, which means, next year, when you look at this again, I do think it should be a health check, and so this is something that we need to think about more long-term, and we are working on ways to streamline the management side of the house, as far as implementing these changes, but we're not there yet, and so just some things to think about.

CHAIRMAN NANCE: Thank you, because it's been pointed out, by a number of individuals, that it seems like what we're doing, the 4.99 or whatever it is, is working, in the fact that we're not seeing giant increases, and we're not seeing a real decrease, and we've got a lot of environmental impacts that are possible with this stock, and we're kind of on an even keel here, and so I think the interim analysis, for me, is are we doing good, as far as management, and it seems like we are. Whether we want to make recommendations of an increase, and those types of things, we can talk about that. Trevor.

MR. MONCRIEF: Andy kind of clarified it and brought up that there was a substantial amount of landings that came in 2022, in Wave 3 and Wave 4, and I had a question, and we've got some Florida folks in the room, and what you observed in Wave 4 is effectively a tripling of the removals in the fishery, between years, and tripling is a noticeable -- Your surveyors should see it, and everyone should see it, and the fishermen should be reporting it. I mean, does it coincide with what everybody has been seeing?

MR. RINDONE: Yes, and, I mean, we've heard, time and again, from the fishermen, that there are loads more red grouper, in the last couple of years, than they have seen in the previous few years, and we continually hear reports of lots of smaller fish, especially

fish that are butting up near the size limit, between like -- Starting about twelve to fourteen inches all the way up to the minimum size limit, and so there's a fair amount of those juveniles that are out there, and that's coming to us from the private vessels and the headboats and charter boats.

MR. MONCRIEF: So, if we're seeing the fish, and the fishermen are catching more, and the index is stable, what's this fishery going to look like if we keep going down the route of 200 percent over?

MR. RINDONE: I think, in part, you mean -- Kind of bouncing off of what you had just started the discussion on, if the catch per unit effort is as high as it is -- I mean, fishermen aren't going to catch fish that aren't there, and, if there are that many fish there, then that could explain those exceptionally high wave estimates, which would be indicative of some recruitment having happened and those fish moving into the fishery at some point.

As far as the effect of those quota overages, those exceedances of the ACL, I mean, it's difficult to be able to say, because we're basing a lot of our assumptions about what's going on in the stock off of what we thought in 2017, and so we're five years removed from that now, and so I don't know that we can answer that very well, as far as what we think is actually going on on there. It may be that it absolutely can support it, and it may be that it can, and I don't know that there's a way to answer that.

MR. MONCRIEF: Which I think is where the index-based approach becomes so valuable, because you're seeing what's in the water, and you're seeing what the population level is and all that stuff, but I just hate to see this come to a point where the fish are there, and they're catching them, and, all of sudden, because they're catching them, we revert back to some punitive measure.

CHAIRMAN NANCE: Steven.

DR. SCYPHERS: Thank you, Mr. Chair. Just a question of curiosity, and so, on the commercial side, what's the explanation behind the underages? I'm guessing this 2022 was hurricane influenced, at least partially, in the south Florida area, but just the consistent under on the commercial side.

CHAIRMAN NANCE: Ryan, please.

MR. RINDONE: I think there's a couple of things at play here for the commercial side. Originally, like prior to the drop in the quota there, the lack of landings was attributable to -- They're just simply not being that -- A number of fish out there that could

support that kind of commercial harvest, and so the fishermen weren't catching them, and it wasn't because they weren't out there trying to, but it was the fish were not there to be caught.

In more recent years, underages -- From what we have heard from the fishermen, underages could have some relation to leasing within the IFQ program, combined with certain fishermen having set up what they're fishing for, or how they're fishing, to be more in line with what they can actually go out and catch, and so there could be a couple of economic factors at play for the recent years, but, prior to that steep decline following SEDAR 61, it was because the fish weren't there to be caught.

CHAIRMAN NANCE: Ryan, can you help me -- The last assessment, was red grouper overfished?

MR. RINDONE: SEDAR 61 did not find it to be overfished. It was close.

CHAIRMAN NANCE: Was there overfishing?

MR. RINDONE: Overfishing was occurring.

CHAIRMAN NANCE: Okay, and so I would hope that our management --

MR. RINDONE: I've got to look back here. Hold on.

CHAIRMAN NANCE: John.

DR. FROESCHKE: It was not overfished and not overfishing, but it was the lowest biomass that we had recorded relative to the MSST, and so remember this is one of those that the MSST is at the 0.5, which is the lowest level that we could, and, had it been at anything at really but that, it would have been overfished.

CHAIRMAN NANCE: Okay. Thank you, because I would hope that, as we look at these indices, that we would be -- Instead of this, that we would see a slight increase, or whatever, over time. I mean, that's our goal, is to get away from that line, and so, if the goal is to move off that line, recommending any increase -- I am not sure I would be comfortable with that, but, anyway, that's just my perception. Roy.

DR. CRABTREE: Yes, and, when you look at it, the thing that jumps out at you is there isn't strong evidence of a lot of movement one way or another, but, I mean, I think we have a dilemma more about interim assessments, and how we're going to use them, and, if it's just a health check, to see what's going on and give you some

notion, that’s fine, but one of the reasons for these was to generate ABC advice, and, the way it is right now, with the OFL not changing, it seems to me that you can only really use these to lower the catch advice, if they make things look bad.

One of the problems we’ve had, with fisheries, if have things get markedly better in a fishery, strong year classes, and there are more fish out there than we thought, and the recreational fishery catches them up and gets closed early, and then we find out, well, we weren't overfishing, and things got better on us.

One of the things we wanted to do to address that were interim assessments, so that we can see those fish coming and raise the catch limits, but, if we can’t get OFL advice out of it, that’s not going to work, because we’re going to bump into the OFL, and our dilemma, right now, is, arguably, there is some evidences here that we could raise the catches a little bit, but, if the OFL is 5.9, and that’s where we are, I don’t think we have any real leeway here to move it, because, to me, if we move the ABC up, and put it much, much closer to the OFL, we’re getting rid of all of our uncertainty buffer, and part of our job is to reduce the ABC below the OFL, to account for the scientific uncertainty, and it’s kind of hard for me to see how we’re doing that, if we end up setting the ABC virtually right at the OFL, and so I think that there needs to be some discussion between, I guess, the region and the Science Center and the council about how we’re going to use these interim assessments and how we’re going to deal with the dilemma of the OFL.

It would be easy to have it come in and show that things are really bad, and you lower the ABC, but part of the rationale for this was to be able to adjust when things were getting markedly better, and I don’t think this allows us to.

CHAIRMAN NANCE: Because, if we had where the OFL was the thing that was being estimated, then we could see that and make adjustments on it, according to how we feel about how far we are now away from the assessment and things like that. Where this one is, basically, you’ve got an ABC, and, as we move up, we’re kind of bumping up against what the OFL was, and it may have changed too. Katie.

DR. SIEGFRIED: Just to be clear, we can change the OFL with the interim. It just hasn’t -- We haven't historically done it. We have to discuss with you all that we were doing it using a similar Cref approach as we do with the ABC, and so, if we have a scalar for the ABC, it would be a similar scalar to the OFL. The problem is, if we continue to put that forward, five-plus years, five to

ten years, after the terminal year of the assessment, we, as a Center, have less faith in, you know, the estimates.

The other thing that I was going to mention, and I could just be a little bit concerned about the index, is I take -- I think Trevor said it's flat, but the last year, from 2021 to 2022, it does drop to one of the lowest values in the index time series, similar though to the last about ten years.

CHAIRMAN NANCE: Do you want your presentation up, Katie?

DR. SIEGFRIED: No, and I need to see this too, and so I don't know which one to do. The bottom-right figure on the screen shows in 2021 is the first year where there's that doubling of catch, and that will take a little bit to transfer into a signal that we get in the index, and now it's been two years of a doubling of catch, and we see a drop in the index in the terminal year.

It will be really interesting what we see next year, and, if what Carrie says is true, which I'm sure it is, because it's very difficult to quickly enact new management, we could be a couple of years into a decline, based on management, with one year of a drop in an index, and so a longer time scale of this index might be -- It might help, you know, those concerns that I bring up with this doubling of the catch, because the red flag is when the index is going down and the catch is going up. That means it's impacting the stock.

CHAIRMAN NANCE: Thank you. Harry, please.

MR. BLANCHET: Thank you. To me, to Roy's point about the health of the stock, the relative abundance, and the initial perception, it seems that, if we're trying to do something that would help inform what the catches are coming from, the longline index might not be the most appropriate tool to do that with, because its vulnerable ages are older than what the recreational fishery is seeing, and so you're always going to be behind what that recreational harvest is observing and harvesting, and so you're never going to be able to appropriately inform, or predict, what your potential for harvest is for that recreational fishery, using something that's not an age-zero or age-one fish index.

That said, I've got -- The other point, and I do think you need to take a look at the scale, because this is a primarily commercial fishery, even though the recreational fishery overharvested significantly in the last two years, or at least in the last year, and it doesn't look like the commercial fishery came close to its quota, and so your overall catch limit may not have been exceeded.

Thank you.

CHAIRMAN NANCE: Thank you, Harry, for pointing that out. Shannon.

DR. CALAY: Thanks. I just wanted to -- I think it's already been said, most likely, but the interim assessment tool is not intended to replace stock assessments. It's intended to be done between stock assessments, because our stock assessment frequency is relatively low, and so what Katie is saying, about the Science Center having less confidence as you move away from the terminal year of a stock assessment, that is true of an interim assessment, and it's also true of our stock assessment projections.

I am not at all troubled by the SSC's conversation, because I see no strong trend here in the index that suggests that our current OFLs and ABCs are problematic, but, you know, I just want to make sure that you do understand, and Katie clarified, that OFL can also be adjusted through an interim assessment approach, and we can bring that, the indices that are used in the assessment, in the interim assessment approaches, and that's a question that has come up a few times, and it's best addressed by an MSE, but, yes, it is possible to use a different index, if that were supported by an MSE.

I hope that the SSC recognizes that this can be a useful tool, and it can be used to change both OFL and ABC, based on information we've received from indices, even though there are still outstanding questions that, you know, may help further refine this process.

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

DR. CRABTREE: To me, the question becomes -- So I get that there's discomfort with updating the OFL and the ABC from the interim assessments, because the uncertainty is going out, but, if you don't do that, then what you're doing is relying on an ABC and an OFL that comes from projections that were done potentially six years ago, and so the question becomes are you better off with a new ABC, and a new OFL, that is informed by the interim assessment or one that is just based on what may be very out-of-date projections, and so I think that's what we have to think about, and it sounds like, from what Shannon said, that we could produce a new OFL, and a new ABC, from these types of analyses, and I guess we need to think about the ramifications for that and the impacts of it.

CHAIRMAN NANCE: What Katie was saying is -- If we're losing confidence in the ABC, wouldn't you lose that same confidence in

the estimate of the OFL? I mean, basically, how they're calculated is exactly the same. Matt.

DR. MATT FREEMAN: Thank you, Mr. Chair. I just wanted to provide some context, and I know there were some comments regarding the commercial landings in 2022, and so, looking at the catch shares information on SERO's page, at the beginning of last year, the quota was at 2.4 million pounds, and the final landings were actually slightly above 2.4 million pounds.

There was a quota increase of 390,000 pounds that didn't occur until mid-August, and so, considering Florida's catch of red grouper, as well as the timing of Hurricane Ian, that may have impacted why the overall, at the end of the year, was only 87 percent of the quota, and so I just wanted to add that to the conversation.

CHAIRMAN NANCE: Thank you so much. Will, please.

DR. PATTERSON: Earlier on, John Mareska said he didn't see how, given the change in the index that was shown earlier -- That he wouldn't feel comfortable increasing the OFL or ABC for red grouper, but this idea of just scaling them both in the same direction, by the same magnitude, doesn't quite sit well with me, because, you know, with these interim analyses, it's not the same level of scientific information, obviously, as a full-blown stock assessment, and so, if we increase the OFL by some amount, you know, the ABC buffer seems like it should be greater than what we saw in the assessment.

If increasing that, to the extent that we think reflects the uncertainty we have in the analysis, we could actually be dropping the ABC, and not increasing it, and so I don't really know like how to evaluate that, and we don't have a mechanism for it, and Roy talked about this in a couple of his comments earlier, but, you know, it could end up in the other direction, and this analysis, it seems to me, is more effective in the other direction, like guarding against stock decline, versus trying to pick up any increase in biomass.

The last thing is, in all of these interim analyses, it always is kind of a head-scratcher to me, especially given the time between red grouper assessments, and wouldn't it be worthwhile just to update the catch information in the old assessment model and rerun it? It seems, to me, that we would have much less uncertainty, in that type of approach, than we would in these interim analyses that only, you know, look at one index and some catch information.

CHAIRMAN NANCE: Well, that's my dilemma too, is, basically, as you're going out in time, we're keeping the ABC and the OFL the same, but it really is, if you have an OFL, you need to have the ABC below, to keep a larger buffer there. Anyway, what's the recommendation from the group? The way I see it, we have three recommendations. We have using a three-year average, using a five-year average, or, in theory, making no -- Basically saying status quo. Jim.

DR. TOLAN: I am going to throw my hat in, and I'm going to go with the status quo. I think there's been enough discussion that this is a good tool to have, and we should acknowledge to the council that the center provided it, but it doesn't -- Given the things we've identified, it doesn't give us a lot of confidence in presenting catch advice, and so we'll just leave it as-is, and so that's sort of where I would be. Thank you.

CHAIRMAN NANCE: Do we have a motion along those lines? Jim, do you have a motion?

DR. TOLAN: No, and that was just my vote.

CHAIRMAN NANCE: Okay. Do we have any motion crafters?

MR. RINDONE: Well, in the absence of a motion, Mr. Chair, I mean, you're left with reporting to the council that the SSC made no recommendations.

CHAIRMAN NANCE: That may be -- Okay.

DR. BARBIERI: So a question here, for clarification, and did the council request catch advice from this interim analysis, or we have been alternating them?

MR. RINDONE: We've been alternating it, due to the downstream effects of getting updated catch advice, because then we have to do a framework action, in order to update that catch advice, and that's a process that is undertaken by the council and the public, and so, by having -- By interspersing the years with a health check and a framework action, it allows the council the opportunity to review the information, consider any further management measures, and then do that framework action and get that implemented.

If we were doing them every single year, there would probably end up being some overlap between the development of those actions and on Andy's staff's end, going through the NMFS approval process and implementation process, for those recommended management changes, and so that's the reason for what we've been doing for now.

CHAIRMAN NANCE: Matt.

DR. FREEMAN: I have one more opportunity to speak. In the original letter that the council sent to the Science Center, and I just thought it would be helpful just to provide two sentences. In it, it said that, given red grouper's intermittent recruitment and vulnerability to red tide, the council requests that the Southeast Fisheries Science Center conduct interim analyses for Gulf red grouper on an annual basis, beginning in 2020. These analyses will be reviewed by the council's SSC prior to informing management decisions, and so that's kind of left open there.

CHAIRMAN NANCE: Thank you for that. John.

MR. MARESKA: Yes, sir. I will take a swing at a motion, and, of course, as always, I'm open to edits. **The SSC recommends not modifying the catch limits of Gulf red grouper from the interim analysis.**

MR. RINDONE: The 2023 interim analysis.

CHAIRMAN NANCE: Maybe put, in front of "catch", "current catch limits".

MR. MARESKA: That's fine.

CHAIRMAN NANCE: Okay. Let me read that motion. **The SSC recommends not modifying the current catch limits for Gulf red grouper from the 2023 interim analysis.** Motion by John Mareska, and do we have a second for that motion? Second by Jim Tolan. Is there discussion? We've had a lot of discussion around this, for sure. Let's go ahead and -- **Is there any opposition to this motion? If you're online, and you have opposition, please raise your hand.** Will, please.

DR. PATTERSON: I don't have an opposition, but I'm wondering if we could change "from the 2023 interim analysis" to "based on".

MR. MARESKA: Absolutely.

CHAIRMAN NANCE: Okay. Jim, any -- Okay. Thank you, Will. **Any opposition to this motion?** Let me read it. **The SSC recommends not modifying the current catch limits of Gulf red grouper based on the 2023 interim analysis. Seeing no opposition, the motion carries without opposition.** Thank you. I think that was a good discussion. I appreciate that.

We will now go ahead and have -- We'll go into our public comment portion of the meeting. If we have any public comment, please let Jessica know, I guess. Eric.

PUBLIC COMMENT

MR. ERIC SCHMIDT: Good afternoon. Eric Schmidt from Fort Myers, Florida. I would definitely agree with your recommendation not to do anything with red grouper right now. January marked the beginning of my fortieth year fishing in the Gulf of Mexico, and my experience with the management process of red grouper has been, and I heard some of the discussion here, and it's always too late, and, by the time you do something, we're already seeing the stock rebound, and red grouper is the mainstay of what I catch, when I'm either commercial fishing or charter fishing.

Yes, in 2017, we had a terrible red tide event, but recruitment has been pretty incredible, and I just talked to a friend of mine who went on a commercial trip for three-and-a-half days, and he had 3,000, bandit fishing, and 700 pounds of red snapper, and so that's quite an improvement, and, when I do charter fish, I'm seeing a lot of juvenile fish, but what happens here is there's this lag time between -- By the time you have a stock assessment, and then it gets down here, and everything is going down, and then, by the time the stock assessment gets reviewed -- I remember when stock assessments were just stock assessments.

When Nancy Thompson was the director at the Science Center, I went over, and with Clay Porch and Shannon Cass-Calay, and we did three days. We did gag grouper, and we did triggerfish, and we did vermilion snapper, and now -- Okay, the process is a little more transparent. However, it drags on and on and on, and I have sat on I don't know how many SEDARs.

By the time everything sort of works out, the fishery is already on its way back, and then the Gulf Council takes actions, and maybe the actions aren't needed. I remember, a few years ago, when the Gulf Council -- When fishermen came to the Gulf Council and said, don't give us any more red grouper, and our fishery is not healthy, and they went ahead and gave us more red grouper, and now the Gulf Council just did the same thing with red snapper.

I was in Corpus Christi, and forty fishermen came to the podium and said don't give us any more red snapper, but we have red snapper, and so the process is really -- It needs to be streamlined, and I don't know how that's going to happen, but it's really -- It's very difficult for those of us that actually participate in the fishery and have to make a business model, and

so that's all.

CHAIRMAN NANCE: Captain Schmidt, thank you for being here. Any questions? Thank you. Captain Zales.

MR. BOB ZALES, II: Bob Zales, representing Southern Offshore Fishing Association. The conversation on red grouper is really interesting on here, because, if you all remember, with the whole premise of Amendment 53, part of our main problem with changing everything, in 53, was the fact that you increased the red grouper quota for the rec side at 20 percent, and that was over the objection of what we all, on commercial side, made the argument about them overfishing, and continuing to overfish, increasing discards, which the increase in discards resulted in the total quota being reduced to account for the recreational discards, which took fish away from the commercial sector.

In the conversation that I just listened to, you're looking at the rec side overfishing their recreational quota, over the past two years, and, because of that, you're talking about, okay, we're going to leave the quota alone, and so, in essence, you're going to be punishing the commercial sector again, based on the unaccountable recreational fishery.

This is creating a tremendous problem, especially in the commercial industry, with the processors, and the restaurants, and everybody involved in there, because you're continuing to reward the sector that is doing the damage to the fishery, while the sector that is taking care of the fishery, taking care of their discards, staying within the quota, is continually being punished, and so I don't know what you do with all that, but the current recommendation that you just made we definitely don't agree with, especially if it's based on the fact of the issues from the rec side, and so that's all I've got. If you've got any questions, I will try to answer them.

CHAIRMAN NANCE: Thank you, Bob. Any questions from SSC members for Captain Zales? Bob, I appreciate you being on. Thank you for those comments. Do we have any others, Jessica? Okay. We will go ahead and adjourn our meeting, and we'll see everybody at 8:30 tomorrow morning, and we'll see where we're at. Tomorrow, we have -- It says 8:30 on here.

(Whereupon, the meeting recessed on January 10, 2023.)

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January 11, 2023

WEDNESDAY 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 Wednesday morning, January 11, 2023, and was called to order by Chairman Jim Nance.

CHAIRMAN NANCE: Welcome, everyone, to our second day of the SSC meeting. We have moved up to Agenda Item Number VI, and we're going to take care of that first thing this morning, and then, after that discussion, we'll go back to Item Number V, which is pick up the Gulf of Mexico gray snapper, but, in order to begin Number 6, Ryan, would you go over the scope of work in detail, so we kind of know what we need to be doing for Item Number V?

EVALUATION OF UPDATED RED SNAPPER CALIBRATION RATIOS FOR GULF STATE SURVEYS TO MRIP

MR. RINDONE: Sure. All right. Good morning, everyone. This morning, representatives from Florida, Alabama, and Mississippi will present a proposal to revise calibrations for each state's respective estimates of private vessel and state charter/for-hire landings of red snapper, relative to MRIP's Coastal Household Telephone Survey. These proposals are updates to the methods, years, and waves considered by the SSC in August of 2020.

The states will provide justification for their recommended selection of years and waves within years, and the SSC will consider the following terms of reference for each state's proposal, and these are to be considered for each state individually and not as a group.

Number 1, is the proposed revised calibration ratio calculated in a method that is not dissimilar from that which was approved as consistent with BSIA by the SSC in August of 2020? Number 2, is the justification for the years and waves recommended for calculating the proposed revised calibration ratio sufficient? If not, describe why, and, if possible, offer alternatives. Then Number 3 is are there any additional clarifications necessary for considering the state's proposed revised calibration ratio as being consistent with BSIA?

You guys are going to get presentations from each state, and each state has also provided background materials, which include a

report to back-up their presentation, and consider the three terms of reference for each state individually in your evaluation, and the SSC will then make a recommendation to the council about each state's proposed revised calibration ratio and its suitability for informing fisheries management. Any questions?

CHAIRMAN NANCE: Paul?

DR. MICKLE: After the recommendations come out of this committee to the council, the council is going to accept these? I thought it was NMFS' final decision. I follow you to the point at which you stopped, but I want to ask about how does a potential change occur, from a policy statement.

MR. RINDONE: For any state for which you approve their revised calibration ratio, we'll include that in a framework action that will update those calibration ratios as they relate to setting the ACLs for the private vessel component, or the private angling component, for red snapper, and so we did a framework, for this purpose, following you guys' recommendations the first time around, and that was implemented just recently, and so it will be in effect for this year.

Any revisions here would basically be a revision to what was put into that framework action by a state, and so, if you guys could approve one state, two states, all three states, or provide feedback to the states -- However it shakes out, you know, and whatever it is that you guys decide to recommend to the council, but, ultimately, it would end up as a framework action that would revise the calculation of the currency with which that state is using to monitor private angling red snapper landings within its jurisdiction.

CHAIRMAN NANCE: Any other questions or discussion, before we begin? Okay. We're going to start with east and then move west, and so we'll go ahead and start with Florida, and Tiffanie Cross is with us today, and she'll be presenting for the State of Florida.

FLORIDA

MS. TIFFANIE CROSS: Good morning. I'm Tiffanie Cross, from the Florida Fish and Wildlife Conservation Commission, and I will start with a brief primer of our state survey and a brief review of our calibration methods, and so, during the red snapper calibration workshop in August of 2020, our methods were reviewed and recommended for use in management, and then, back a year ago February, during the Gulf state recreational catch and effort

survey transition meeting, the calibration method was again independently reviewed and determined that it was statistically valid, and then, for the Gulf gag grouper, SEDAR 72, it again underwent another independent review, and it was recommended for use in that stock assessment.

Just to kind of give a primer of the State Reef Fish Survey, it was implemented in May of 2015 as the Gulf reef fish survey. It covered the Gulf coast of Florida, excluding Monroe County, and then, in Wave 4 of 2020, it was expanded, state-wide, to include Monroe County and the Atlantic coast of Florida, and we called it the State Reef Fish Survey, which is also known as SRFS.

That change happened without any change to the methodology of that survey, and this survey runs continuously, side-by-side, with MRIP, and so the effort estimation component of the SRFS runs independent of MRIP. It's a monthly mail survey, and the address list is obtained from the reef fish angler registry license requirement, is what we use to select our recipients, and then our under-coverage estimate is obtained from questions that we ask during the intercept survey at the dockside.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: When you say "under-coverage", that means unlicensed effort?

MS. CROSS: It means that, for those folks fishing without the required State Reef Fish Survey designation on their license, and so, dockside, we ask them, do you have the State Reef Fish Survey designation, and we ask them to get their license out and look at it, and, if they don't have it, we record that, and we issue a correction for that.

DR. CRABTREE: Now, when you do the dockside intercepts, is it mandatory, or do you just ask them if we can interview you?

MS. CROSS: Correct, yes, and it's voluntary participation.

DR. CRABTREE: So, presumably, it could be that someone who didn't have the correct licenses would decline to be interviewed?

MS. CROSS: It's possible.

DR. CRABTREE: Thanks.

MS. CROSS: The CPUE estimation comes from the dockside interview intercept survey, and it's not independent of MRIP. We combine

the APAIS interview data with our own SRFS intercept data to arrive at a CPUE estimation.

DR. TOLAN: Mr. Chair, can I follow-up to Roy?

CHAIRMAN NANCE: Yes, Jim.

DR. TOLAN: On the dockside survey for declines, what is your average rate for declines? I'm just curious. Coming from the point of view of Texas, we have a number that we always have for people that refuse to participate, and I was just curious.

MS. CROSS: I did not bring that number with me today.

DR. TOLAN: Okay. Thank you.

DR. GRIFFITH: Were you asking about the response rate?

DR. TOLAN: Well, the people that are approached, but say that I don't want to participate.

DR. GRIFFITH: Again, I was going to ask about the response rate to the mail survey, and do you have those figures?

MS. CROSS: It fluctuates between -- It's around 21 percent.

DR. CRABTREE: Do you know, offhand, just approximately, how much unlicensed effort you run across? Is it 10 percent of the effort, or 2 percent?

MS. CROSS: Our correction ratio is about -- It hovers above and below two, and so, basically, our effort estimate that we get from the mail survey, we multiply that by two, and so we're doubling it, 50 percent.

DR. CRABTREE: What I'm -- Say you interviewed a hundred people of the dock, and what percentage of them likely don't have the appropriate license?

MS. CROSS: It would be half.

DR. CRABTREE: Half?

MS. CROSS: Yes.

CHAIRMAN NANCE: Jason.

MR. ADRIANCE: Thank you, Mr. Chair. To follow-up on that, have

you checked with what your enforcement department sees on the water, to kind of get an idea of what they see, as far as unlicensed, to give you an idea of how that compares?

MS. CROSS: We have discussed that, and I don't recall how much they see, and I could definitely gather than and come back with that.

DR. BARBIERI: It's comparable.

MS. CROSS: Yes. I mean, I think it's comparable. Okay, and so what's included in the SRFS estimates, and it's private-boat mode only, and it's a monthly effort estimate of landings and discards for a suite of reef fish species that are listed there, and, from May of 2015, when it was first implemented, up until June of 2020, it only covered the Gulf coast, excluding Monroe County. When we expanded, in July of 2020, to the entire state, it covers the Gulf, the Atlantic, and the Keys, and that's ongoing. It does not include charter or shore mode and any non-SRFS species.

How do the MRIP and SRFS compare? The MRIP Coastal Household Telephone Survey overlapped with SRFS from May of 2015 until December of 2017, and those estimates, the SRFS and the MRIP-CHTS, were very similar, but the SRFS was more precise, and so it improved the precision of those estimates.

The MRIP Fishing Effort Survey, the FES, was implemented in 2018, and the annual estimates, on average, are consistently higher than the SRFS estimates, and those estimates of the MRIP-FES are less precise than the State Reef Fish Survey, and the relevance for red snapper management, the ACL targets, is they're currently based on CHTS, and future assessments will be based on the FES.

We need a way to -- We needed a calibration, and so we wanted to convert catch advice derived from future stock assessments using MRIP-FES to the same currency as the SRFS, and stock assessment outputs are on an annual scale, and so our objective, for this calibration development, was to develop species-specific conversion factors that may be applied to annual fully-calibrated MRIP estimates that are useful for tracking state ACL for red snapper in SRFS currency, and we also wanted to be able to produce a historic time series in the same currency as the SRFS, to be used as an alternative time series, or for sensitivity analyses, in stock assessments.

CHAIRMAN NANCE: David.

DR. CHAGARIS: Sorry to interrupt, and thank you, Mr. Chair, but,

before we go into the calibration, can you give us a little overview of the differences between SRFS and MRIP, as far as the types of questions you're asking or how the sampling is distributed, and like why would it be, you know, superior to MRIP for these species in Florida?

MS. CROSS: So there is a number of fundamental differences between the State Reef Fish Survey and MRIP. When we designed the State Reef Fish Survey, we wanted to account for as bias, inherent bias, as there would be, just because of the different distribution of the fish species and different behaviors of people, based on where they live, and so we stratified the survey pretty heavily.

We cut the state into the northwest Panhandle region, and then the north peninsula region, a central, and then a south peninsula region, and then, from there, we took the Gulf coast counties and put them in their own bucket, and then the central-located counties, that are not coastal, are in their own little bucket, and then the Atlantic coast counties, and so it's like do you live on the coast or not, and which coast do you live on.

Then, from there, we wanted to combine -- The idea was, if you own a boat, you're probably a more avid fisher than if you don't, and so we were able to work out a contract with our Division of Highway Safety Motor Vehicle Department, and we get vessel registration data every month, and we match that to our State Reef Fish Survey license holder list, by driver's license, and then we can stratify on boat ownership in a household as well, and, for people that do not --

They're non-residents of Florida, and, if they live in Georgia and Alabama, they're probably fishing in Florida more often than anybody else living elsewhere in the country, and so Georgia and Alabama residents are in their own strata, or stratum, and then everybody else in the country is in a different stratum, and so it's highly stratified to account for all of that different variability.

Then, as far as the mail survey questions, we thought it was really important to kind of frame the timeframe that we're asking about, and so the very first question that they see is did you go fishing, did you participate in a private recreational fishing trip in Florida during X month, and, if it's a yes, they move on to the next question, which is a calendar of that month, and it has like check-boxes. They can choose which days that they went fishing, and it really helps them to jog their memory of like, oh yeah, and this is -- I can look at my own calendar and figure out what I did last month.

Then, from there, we drill-down further and say, for the nine most recent trips that you took, you know, did you fish X percent, or what percent of the time did you spend fishing greater than whatever miles from shore, and those are listed for whether they pick a Gulf region of where they fished or an Atlantic region, and we ask them what regions they fished in, and so we have the regions kind of divvied up around the state.

Then they get to tell us what species they fished for, and, to improve the saliency of that survey, we also let people report other species that aren't reef-associated species, so that we're actually getting people that are inshore fishermen to return the survey as well. Before we did that -- Before, we didn't include those species, and that helped increase our response rate.

The MRIP survey, the FES survey, is a survey that was designed to capture people that fish and people that don't fish, and so their frame is you're matched to a saltwater license, or you're not matched to a saltwater license, and they don't further stratify coastal or non-coastal within the State of Florida, and then, from there, and so that survey lists -- They talk about like how do they consume their weather information, and a lot of different other things, and then the last questions on that survey are asking how many fishing trips did you take in the prior two months for shore mode and for boat mode.

Then it's just a very fundamental different survey, and ours was designed to get at improving estimates for reef fish, and the MRIP is designed to be a very general survey, to capture general fishing trips over the last two months.

DR. CHAGARIS: Thank you for that explanation.

MS. CROSS: Sure.

DR. GRIFFITH: Could we get copies --

CHAIRMAN NANCE: David, just a second.

DR. GRIFFITH: I'm sorry.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Go ahead, David.

DR. GRIFFITH: I was just going to ask if we could get copies of the survey forms.

MS. CROSS: Sure. Absolutely.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: I was going to just say, you know, for all of us, in retrospect, right, and we didn't think about how, I guess, a lot of the SSC members may not be familiar, right, with the individual Gulf state surveys in detail, right, and so there is documentation, and perhaps we should have prefaced these presentations with presentations that, you know, would describe all the intricacies, right, of the survey, of the two components, for effort and for catch, and then all the statistical procedures in detail, all of those things, and it was an oversight on our part, I guess, in general, in planning for this, because we're just trying to address the council motion asking about the calibrations, but, in retrospect, I'm thinking the questions that are being asked make sense.

MS. CROSS: Okay.

CHAIRMAN NANCE: Harry, please.

MR. BLANCHET: Thank you, Mr. Chairman. To be sure that I understand this, when Florida is estimating its distribution of trips among offshore areas, that information does not come from the dockside interview, and that comes from the mail survey?

MS. CROSS: Correct. Our effort estimates are fully derived -- They are directly estimating from the mail survey. The only information in the effort estimate that comes from the intercept survey is that coverage adjustment, the adjustment we make for folks who should be on the survey frame, meaning that they have the State Reef Fish designation, or license, but they don't, because they didn't get it.

MR. BLANCHET: So your out-of-frame adjustment comes from the dockside, but the distribution of the effort -- So that's getting at total effort, but the distribution of the effort, whether it's inshore, nearshore, or offshore, up or down the peninsula, whatever, that comes from the mail survey, and so that's different than how MRIP partitions its efforts, in terms of their using their dockside.

MS. CROSS: That's correct.

MR. BLANCHET: Okay. Thank you.

MS. CROSS: Okay. Our approach, in developing this calibration method, was to quantify the overall differences between the SRFS and the FES estimates across variable years and waves over which the two surveys overlap, and they overlap from 2018 to current.

We wanted to apply a single calibration factor to the annual FES estimates back in time, and so the recreational harvest seasons for red snapper were widely variable, off the Gulf coast of Florida, prior to 2018, in state and federal waters. Historically, those seasons were six to twelve months and were consistent in state and EEZ waters, and, for the years that the SRFS and MRIP survey overlap, from 2015 to 2017, the seasons were weeks, or days, and it was super variable between state and federal waters.

Then, from 2018, when the EFP was put in place, to present, the seasons have consistently been two months or more, and consistent in state and federal waters, and so it wasn't appropriate to apply calibrations at a fine scale back in time, by month or area fished, and so the first step of this method was for each species and each estimate type, and so the number landed, the pounds landed, or the number released or discarded, and we took the estimates and variances from each estimation method, and we summed them across all years, all waves, and all areas fished, and so across state and federal waters.

For each of the paired sums, and so we had a sum total for SRFS and a sum total for FES, the ratio was calculated as the total SRFS estimate divided by the total FES estimate, and you should note that the FES estimates include Monroe County, but the SRFS do not include Monroe County, and so we're calibrating SRFS estimates that do not have the Monroe County to MRIP estimates that include Monroe County, and that was because the historical SRFS time series didn't include Monroe County, and it was important to continue with that, and so we used the delta method to approximate the variance of those ratios, and it incorporates error associated with both the numerator of the SRFS estimates and the denominator of the FES estimates, and we used the R package MSM to carry out those variance calculations.

The other thing that we wanted to consider was that, because we combined APAIS data with our SRFS intercept data, we know that the survey is correlated, but the degree to which is unknown, and so we explored different levels of correlation in calculating that variance, and so zero correlation is the most conservative approximation, and it basically ignores that the correlation exists, and we explored a 0.5 level and a 0.9 level, and, because we don't know what degree to which they're correlated, we recommend using the zero correlation, and that's what we presented here

today.

The next step that we did, to produce a time series, is to multiply the annual FES estimate for each year, species, and variable with the corresponding ratio, and then, again, the variance was approximated using the delta method, and so, for this calibration update, there were no changes to our method of calculation of that ratio, and so, previously, our report included an FES to SRFS conversion, using 2015 to 2019 private boat mode MRIP estimates that were publicly available from NOAA OST.

For this update, we used data from the Southeast Regional Office. They provided MRIP private boat mode estimates that excluded charter estimates, and they gave us both FES and CHTS estimates, and so we included the most recent years of the overlapping time series, and the MRIP and FES and SRFS is continuing to run side-by-side. We excluded the year 2020, due to suspended and reduced intercept survey sampling, because of the COVID-19 pandemic, and then we also ran calibrations for the CHTS to the SRFS calibration.

DR. CRABTREE: Is most recent years -- Is that 2021?

MS. CROSS: Yes, and so -- Again, Monroe County is included in MRIP, both FES and CHTS, and excluded from SRFS across all the years.

CHAIRMAN NANCE: Sean, please.

DR. POWERS: Do you have any idea how much of a reduction was in 2020, as far as something like percentage, and did you all do half as many as you all normally do, or did you all do zero?

MS. CROSS: We had several months where we weren't sampling at all. The sampling in the field ceased for MRIP and for SFRS both.

DR. POWERS: Did your effort survey in the mail still go out?

MS. CROSS: It did.

DR. POWERS: So the effort wouldn’t have been affected by 2020, by COVID.

MS. CROSS: Correct.

DR. POWERS: It’s just the intercepts.

MS. CROSS: The dockside intercept survey was either completely non-existent, or very slow to ramp-up, because of regional hotspots

of the pandemic that prevented us from getting into the field as quickly as we would have liked.

CHAIRMAN NANCE: Was there a decrease in mail return during 2020? You sent out as many surveys.

MS. CROSS: Correct.

CHAIRMAN NANCE: Did as many come back as normal?

MS. CROSS: It seemed like it, yes. Everything seemed normal for the mail survey, but it was just the dockside intercept surveys.

CHAIRMAN NANCE: Okay. Luiz, please.

DR. BARBIERI: Just another point of clarification, and there were also, in the State of Florida, and I don't know how this happened in other states, but there were boat ramps, and fishing piers, that actually closed, officially closed, by either counties or municipalities or the state itself, and so this generated a complete redistribution of fishing effort, right, and it impacted, really, the survey in that way, because people were not able to access some of those boat ramps.

MS. CROSS: For this update, we considered several scenarios, and we presented what we originally presented in 2020, and so we calibrated from May of 2015 to December of 2019, and then we did the May of 2015 to December of 2017 years, which are the years that the SRFS, CHTS, and FES surveys overlapped, and they were benchmarking CHTS and FES during those years, and those were the years recommended and approved for Florida by the Gulf SSC during their August 2020 meeting.

Then the third scenario that we explored was the years 2018, 2019, and 2020, and those are the years that SRFS and FES overlap, and we excluded 2020, again, for the pandemic, and then the fourth scenario was all available overlapping estimates from May of 2015 to December of 2021, excluding the year 2020.

I included this table from our publication, from the report we submitted, that basically lists the total sum, the sum totals, of those estimates across years, and across waves, and you guys can look at that in the report, and I plotted these so that you can see the blue bars represent the years 2015 to 2019, and the orange is 2015 to 2017, which is what the SSC approved prior. The 2018, 2019, and 2021 are the years that the FES and the SRFS overlap, and then the gray bars is the 2015 to 2019 and 2021, and that would be considered the full time series.

On the X-axis, we have landings, in numbers of fish, grouped together, and landings in pounds grouped together, and we calculated those ratios separately, and then the observed ratios on the Y-axis, and, overall, these ratios aren't terribly different, and this is the SRFS to the MRIP-FES conversion, I should point out, and so we're looking at, for the full time series, the ratio is -- In landings in pounds, I think it's 0.38, and then, for the 2015 to 2017 time series here, I think it's 0.4, for pounds.

Moving on to the SRFS to CHTS conversion, again, it's the same. It's landings in numbers of fish grouped together, landings in pounds grouped together, and the observed ratio on the Y-axis, and the full time series is in gray, and the ratios are a little bit higher, and so one-point-two-ish, for landings in pounds, versus I think it was like one-point-one-something for the 2015 to 2017 years.

This table is also in the report, and it lists the different scenarios by the conversion type and the landings, and it provides the ratio and then the PSE for each level of correlation, and so, if you're curious about the correlation estimate of variance, we can look at those, and I think that's all I have. There is our paper that we originally presented, and it's available on the Gulf Council's website, and, with that, I can take questions.

CHAIRMAN NANCE: Okay. Basically, keep questions to this presentation, and we're not going to make motions until we have all the presentations and so forth, but, certainly, if there's any additional information on Florida, now would be the time to ask those questions, for clarification. I did have one, Tiffanie. In Slide Number 5, you talked about precision, about FES and SRFS, and so was there -- I'm assuming a statistical analysis was done to calculate precision and those types of things.

MS. CROSS: Yes.

CHAIRMAN NANCE: Okay. Trevor.

MR. MONCRIEF: I mean, just an overall comment here, and it's a similar method to what was used last time, and it's adding in additional years, and, I mean, it's fairly clean, and the end result is more fish, and I think this is a pretty straightforward one, and I don't have much discussion on it, and I don't envision there being much discussion on it.

CHAIRMAN NANCE: Any -- Sean.

DR. POWERS: The survey has been certified by MRIP, and the consultants, in each of the states, gave different suggestions to get to that certification, comments that had to be addressed, and so have you changed -- Based on the consultants' opinions and comments, did you change anything over the survey year, and then in what year do you think that all the changes were made and nothing has changed since?

MS. CROSS: We did a number of tests on the survey, to explore improving the response rates of the mail survey, and we also reevaluated boat ramps that we would be selecting for the intercept survey, to improve the coverage of those trips as well, and I would say, by 2018, all of the changes had been implemented that we -- The major changes that we've made were implemented by 2018, and then, in 2020, when we switched to the State Reef Fish Survey, from the Gulf Reef Fish Survey, we changed the color of the survey, from green to blue, so that people on the Atlantic coast, that had been getting the survey in the mail, and like tossing it in the trash -- We wanted them to say like, oh, what is this, and we've never seen this before, and let's fill it out, and hopefully send it back to us.

Then, you know, there were some fundamental changes there, and we had to include ways for people to answer, you know, the survey for trips taken in the Atlantic, in the Keys, and that sort of thing, but, other than that, nothing large, no big changes.

CHAIRMAN NANCE: Yes, please, Bev.

MS. BEV SAULS: I just want to point out that our MRIP certification was not provisional, and their conclusion, after peer reviewing our survey methodology, was that it was statistically sound. The only recommendations we received were, like Tiffanie said, to improve our response rates, and so any of the changes that were made didn't fundamentally change the methodology of the survey, and so we consider 2015 to be the start of the survey, since no changes have been made.

CHAIRMAN NANCE: Beverly, most of us know you, but would you introduce yourself to those that maybe don't? Thank you.

MS. SAULS: Sorry. I'm Beverly Sauls, and I work for FWC, with Tiffanie, on the State Reef Fish Survey.

DR. POWERS: So, going back to 2018, and so do you think the changes you made, in either boat ramp selection, any of those things, that it increased the efficiency, or do you think that it

didn’t have much of an effect?

MS. CROSS: I don’t think that they were efficiency improvements. I think that they were improvements in improving our estimation, like improving our estimates, and so, if you’re improving your response rates, you’re having more people respond to the survey, and so, yes, it has brought -- Those changes we made improved our response rates by up to 3 percent, and so we went from like 19 percent to 22 percent, but, like Bev said, they weren't fundamental differences in methodology, and they were just minor adjustments to improve our response rates.

CHAIRMAN NANCE: A follow-up, Luiz, to that point?

DR. BARBIERI: Just a quick follow-up on that point, and do you remember -- Your Slide 13, and it says, under Number 2, that the SSC reviewed and approved the calibration and recommended use of the 2015 to 2017, and do you remember why the SSC made that recommendation?

MS. CROSS: I think it was because those are the years that the FES and the CHTS directly overlapped, and so they wouldn’t -- If they included years post-2017, they’re then having to figure out a calibration between FES and CHTS, which is -- That relationship has a considerable amount of variability, and I think, the further that the years have gone by, that relationship has become, you know, much less stable.

DR. BARBIERI: Right, and so what you’re saying is that, during 2015 and 2017, the surveys, the three surveys, GRFS, MRIP-FES, and MRIP-CHTS, actually had samples from the field that were running overlapped, right, and so --

MS. CROSS: I believe so.

DR. BARBIERI: So additional years, later on, to have -- Because CHTS no longer existed, right, and any conversion to CHTS would entail a conversion from FES to CHTS.

MS. CROSS: That’s correct.

DR. BARBIERI: So that was the reasoning why the SSC preferred, right, the --

MS. CROSS: Right, and it’s worth noting that the SRFS continues to run concurrently with the FES, and so we know what that relationship is, because it’s ongoing, and we don’t know what the relationship is between CHTS and FES for those years, and we can

approximate it, but, because the two surveys are continuing to run side-by-side, we thought it was appropriate to include all of the years available for that overlap.

CHAIRMAN NANCE: Sean, to that point?

DR. POWERS: So the SSC approved the Gulf Reef Fish Survey calibration method to CHTS, and how do you all plan to get from CHTS to FES, just take the conversion that MRIP is using in general, or will you -- Or is this new calibration to FES?

DR. BARBIERI: The calibration that was provided in 2020 was SRFS to FES.

DR. POWERS: SRFS to FES.

DR. BARBIERI: To FES, yes, and then, because the red snapper assessment had been conducted using CHTS currency, and, therefore, the quota was set up in CHTS, monitoring the quota required a conversion to CHTS, right, and there is a presentation that Jeff Pulver gave that showed the side-by-side --

DR. POWERS: It's jogging my memory. In this right now, we're talking about just red snapper, but, I mean, is the plan to use the same ratio estimator for all reef fish species?

MS. CROSS: We calculated calibration ratios for individual species, and so, if it's for gag, we use gag estimates. If it's for red snapper, we use red snapper estimates, and the gag calibration was used in a sensitivity run for SEDAR 72.

CHAIRMAN NANCE: Richard, did you have a comment on that?

DR. RICHARD CODY: I just wanted to follow-up on the discussion about FES versus CHTS. The overlap period, or the benchmarking period, for the model, the calibration model, used to generate FES estimates going back in time, and also CHTS estimates going forward in time, is based on the benchmarking period of 2015 to 2017, and so that's what Tiffanie is referring to in that aspect.

CHTS estimates, from 2018 onwards, are modeled estimates, just as FES estimates going back in time, prior to 2015, are modeled as well, and so it's worth noting that. The consideration here might be that, with the calibration model used for FES to CHTS, there is a component in there, in recent years, that deals with the switch to cellphone use and decreasing response rates in the CHTS survey, and so there is some concern that, the further you get away from the benchmarking period --

First of all, at some point, there has to be a leveling-off of cellphone use. How that might impact the overall calibration model -- I don't think it's a great concern in initial years, but it could be going forward, and we haven't looked at that, and so that's something for consideration.

CHAIRMAN NANCE: Thank you. Steven Saul, please.

DR. SAUL: Thank you, Mr. Chair, and thank you, Tiffanie, for the presentation. I just had a quick question on your correlation assumption. You mentioned that you think the series have some degree of correlation, which makes sense, but assumed zero, because, obviously, you're not sure what level of correlation there may or may not be, and I was just curious to know if you happened to explore changing that value and what effect, or impact, it might have had on the ratios going forward, even if you just change it a little bit to assume like a 10 percent correlation. Thank you.

MS. CROSS: Sure, and so, in that last table that I presented, the ratio itself is not impacted by the correlation assumption, and it's the error associated with the ratio, and so we ran the different scenarios of no correlation, 50 percent correlation, and 90 percent correlation, to explore what the error rates are, and that was presented in that last table, and it's also in the report that's on the web, and I don't know if I can get to that last table.

I mean, from memory, the error, I think, changes by a few percentage points, at most, from zero to 90 percent correlation. It's right there, and so this is the SRFS to MRIP-CHTS conversion, and, on that right-hand side, where it says, "ratio PSE, zero, 50, and 90 percent correlation", those are the PSEs that were estimated, using the delta method, with those levels of correlation. Does that make sense to you? Hopefully I answered your question.

CHAIRMAN NANCE: Richard, to that point?

DR. CODY: I just wanted to follow-up, and the zero correlation, the zero percent correlation, is the most conservative of the three, and it was a recommendation of the consultants that independently reviewed the survey.

CHAIRMAN NANCE: Thank you. Roy.

DR. CRABTREE: Where this gets a little complicated, to me, and it has to do with the CHTS and the FES, and, when I look at the years,

in part, I feel like it would be cleanest just to have a conversion from SRFS to FES and only use the three years that SRFS and FES ran side-by-side, and then, if you want to get to the CHTS currency, you convert SRFS to FES and then use the established conversion to go back to CHTS, but I worry that --

I mean, Richard brought up the cellphone stuff and all of that, and, if we continue to do a conversion that involves years that are already themselves conversion, because the CHTS certainly doesn't exist anymore, and the FES didn't exist, and so that's where I am trying to -- I am wondering if you all have a recommendation on that, but I am sort of leaning that the cleanest way seems to be to use 2018, 2019, and 2021, and just do a calibration that converts between SRFS and FES.

That way, you avoid the complication of pulling in the CHTS business, which seems to complicate the whole thing, and I'm sure, Luiz, you've thought about this.

CHAIRMAN NANCE: Luiz, please.

DR. BARBIERI: Well, I mean, this is why I asked the question, right, is because, before, and I don't know if we could get that presentation from Jeff Pulver that was given to the SSC back in August of 2020, and there is a table, Slide 7, that shows the options that could be used for that MRIP-FES to CHTS calibration, and the SSC was thinking along the same lines, Roy, was that, because conversion from FES to CHTS would require a calibration, for years that were not used for benchmarking, we decided to recommend the previous calibration, right, be following just those years where there is complete overlap, and that was used for benchmarking, and that would require --

So this is another thing that's on the table, right, and the idea is -- This is why there were several options that were presented there, and the SSC can look at them and pick, between those, what would be the most applicable.

DR. CRABTREE: Am I correct -- I mean, I'm looking where it says that SRFS and FES overlap in 2018, 2019, and 2021, and is 2018 when the FES survey went in place?

MS. CROSS: Yes.

DR. CRABTREE: So any earlier years that 2018 would be using CHTS estimates converted to FES?

MS. SAULS: No, and, actually, the FES was being tested as early

as 2015.

DR. CRABTREE: So, if you then look at a six-year period, are you using FES estimates and SRFS estimates? I guess I don't understand why it says SRFS and FES only overlap in 2018, 2019, and 2020, if you actually have FES going back further in time.

CHAIRMAN NANCE: Go ahead, Beverly.

MS. SAULS: The SRFS and --

DR. BARBIERI: Sorry, Bev, but so this was the SERO presentation at the time, right, because, since CHTS was no longer being conducted after 2017, and the quota for red snapper would have to be monitored in CHTS units, right, the calibration is really used for the quota monitoring, and so it requires a conversion to CHTS.

CHAIRMAN NANCE: (Dr. Nance's comment is not audible on the recording.)

DR. BARBIERI: I don't remember, and my memory fails me, but so those are the options that were presented, and there were pros and cons to both, right, but I just think it's important for us to consider, because, you know, we were asked to prepare -- All the states were asked to prepare different options there, in terms of combinations of years, or waves, to be used for conversion, and I think germane to this discussion is do we need to have a change in the calibration, versus what we had recommended before.

DR. CRABTREE: I am just trying to understand what years FES and SRFS were around simultaneously, and I guess I was confused by the one slide, and so SRFS and FES ran side-by-side from 2015 all the way through.

CHAIRMAN NANCE: Okay. Thanks. David.

DR. GRIFFITH: I just wanted to thank you for the presentation, and, also, when you said you improved the response rate, did you like send out additional like postcards, or something like that, and then have you considered putting the survey online or anything like that?

MS. CROSS: The improvements to the response rates were things that we did to improve the overall recipient's experience and readability, and so the original survey was oriented in reading from top-down, instead of left to right, when they're reporting trip information, and I think it was kind of confusing, and overwhelming, and so we did a series of side-by-side testing, to

figure out what things were improving the response rates, and then we adopted those, and so things like changing the orientation of the survey to read from left-to-right, and changing how many trips they need to report.

We used to ask about twelve trips, and so imagine opening a survey packet and you have like a whole stack of paper, and it's like, well, I'm not doing this, and so then we did an analysis of how many trips, at most, people are reporting, and we determined that nine, asking about nine trips, is easier, and we were able to eliminate another page of the survey. Things like that.

Then, for your next question about going online, actually, this month, right now, we are doing a side-by-side test that tests the paper survey versus the web-based survey, and we were finding that our younger age classes weren't responding as much through the mail, and so we're hoping to capture that cohort, and so it will be really -- I'm excited about it, and we've already -- The responses we've received, people are writing comments like we love this online experience, and thank you so much, and it's a long time coming, and so, yes, stand by for those results, I guess.

CHAIRMAN NANCE: Thank you. Jason.

MR. ADRIANCE: Thank you, Mr. Chair. Since we touched on the original ratio, can you remind me -- Was that numbers or weight, when we did that? I just can't remember.

DR. BARBIERI: Well, the report actually presented in both, in numbers and in weight.

MR. ADRIANCE: I was curious about how we did it originally, and was that the 1.06, and was that numbers or weight?

CHAIRMAN NANCE: Which was recommended?

DR. BARBIERI: I think that was in weight, yes.

CHAIRMAN NANCE: Thank you. Will, please.

DR. PATTERSON: Thank you, Mr. Chair. Thanks for the presentation, and excuse my ignorance, and I don't typically work in this world of calibration of recreational landings, and it makes my head spin, sometimes, thinking about it, but I am confused. Similar to the questions that Roy was asking, why -- Given the time series now of FES, why there can't be a direct calibration between the SRFS estimates and FES, and the second question I have is how come the SRFS process doesn't use the FES effort estimates, therefore

produce an estimate that might be pretty similar to the FES estimate, and what am I missing there?

MS. CROSS: For your first question, the SRFS absolutely can be calibrated to FES, and I have provided it in both ways, and so SRFS to FES and SRFS to CHTS, and the effort estimation portion of your question is, when we set out to design the survey, the overall goal was to improve the recreational statistics for reef fish species in the Gulf of Mexico, and the reason for that is the MRIP survey was designed to be a general survey to estimate effort and catch for a whole suite of species for shore mode, boat mode, inshore species, and offshore species, and it just wasn't catching those more infrequent trips for reef fish. Repeating their effort estimation method wouldn't get us to improving those estimates. That's why we designed it that way.

CHAIRMAN NANCE: I think Andy wanted to respond too, and then, Will, I'll have you.

MR. STRELCHECK: Just to help answer Will's question, so two issues here. One is the red snapper stock assessment, right now, is still in the CHTS units for calculating our quotas, and so we need the state quotas to be commensurate with the state survey methodology that they're using to monitor that quota.

Once we go through the research track assessment, and get through the next stock assessment cycle, I'm hoping that we will either be able to convert from FES to the state survey directly or, depending on if they incorporate the state surveys into the stock assessment, have a direct one-to-one relationship there.

The other point is getting at kind of the differences in the effort estimation, and there's a lot of criticism, right now, of the federal effort survey, with the belief that it's estimating too high effort, and so we have embarked on a transition plan, with the states, to evaluate these differences between the state and federal survey, to try to determine what's causing those differences, and what biases might exist with one, or both, of those surveys, and maybe not reconcile, but at least troubleshoot, ultimately, what's causing these large discrepancies in effort estimation.

CHAIRMAN NANCE: Thank you, Andy. Will.

DR. PATTERSON: That addressed it. I mean, obviously, you've done the calibrations here, but I was confused about why go to CHTS and then back to FES, and so I was missing that point about monitoring the quota. I mean, Luiz had mentioned it, but it didn't quite

stick. Thanks.

CHAIRMAN NANCE: Thank you, Will. Richard, did you have any more comment on that?

DR. CODY: Just one other item related to the FES. The FES, even though it's a mail survey, similar to, you know, the mail survey that the SRFS does, they're very different in scope. The FES is very general, and it uses the U.S. Postal address system for its sample frame, and then we use license information to improve the efficiency of that, and it gets basic information on private boat, versus shore mode, effort, and that's it.

We use the APAIS then to adjust for out-of-state coverage, and also to allocate effort to different areas fished, and so there's differences in the way that both surveys approach coverage-related concerns and those kinds of aspects of the survey, or adjustments in general.

CHAIRMAN NANCE: Thank you. Paul, was it you that had your hand up?

DR. MICKLE: Real quick, Tiffanie, I appreciate the presentation, and I feel like I should apologize, a little bit, that there was a lot of methodology questions, not about calibration, but about the survey, and I have questions too, and I might just ask one of them, just for time, but it seems a little strange, but so we have a lot of new members who may not have seen the methods behind each state survey, and so this is a little bit strange for some of the new members of this committee.

I guess we'll do our best, but it's important that we understand those methods, because it involves the calibration process, right, especially with correlations, and that's what my question is, and so I have one question, but I want to pose it to a couple of different groups, so to speak, but balancing that, and understanding the mail survey, which is effort, right, and so both FES and SRFS, and I may say something incorrect, and so I don't mind you just correcting me, but their total being is to estimate effort, and it's through the mail.

The correlations that can be created there are -- There needs to be, in my opinion, a little bit more effort, on everybody's part, to try to help with that, and then my question is your effort survey that you send out, and you did mention it briefly, in the beginning of the presentation, how it was different on a spatial scale, where the mail is sent out to, but, with the questions of it, and I think you were going to send that out too, but the

question is does it dial-in on whether someone lives on the water or off the water, or things like that, and then, also, the -- I guess are you acquiring the addresses from boater registration efforts, or how is the universe created from the effort survey, because I'm assuming that it's done much differently from FES, but, again, I don't know.

MS. CROSS: Sure. A point of clarification that the correlation between the two surveys comes from the fact that we combine data collected through MRIP APAIS, the dockside interview, with our own dockside interview, and so we're essentially surveying similar people, and so that's where the correlation comes from and not from the effort survey. Then I just forgot your next question, and it was --

DR. MICKLE: Universe creation on the mail.

MS. CROSS: Right, and where the survey frame comes from, and so, in the State of Florida, there is a requirement, if you're fishing for any of those suite of species on that slide that I presented, that you must have the State Reef Fish Survey designation on your saltwater license. It's free, and you can go to the tax collector, or online, or anywhere a license is sold, and get it, and so, when they do that, when people sign-up for their saltwater and get the designation, their driver's license hits the driver's license State of Florida database, and we pull their mailing addresses in from there, and so that's where that universe comes from.

Because we have their address, we know whether they're in a coastal county or an inland county, and we can stratify them that way, and so we don't have any questions on the survey that ask, you know, where do you live, because we know -- We already know where they live, and does that make sense? Okay.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Well, just to supplement something that is not directly to that question, but relates to, I think, what you're trying to get to, and to some of Will's points earlier, I mean, the issue of SRFS here, in the way that it was implemented in the State of Florida, was not to replace MRIP.

It was to create a specialized survey that is integrated with MRIP, right, and so we understand the concept of specialized surveys, because we know there is something called the headboat survey, right, and we're familiar with that data series that is imputed into stock assessments all the time, and we know that there is something called the for-hire survey, right, that is conducted

that is treating the universe of fishers that are for-hire, in the for-hire sector -- I'm talking about just the general MRIP for-hire survey, right, and so there are those things that are specialized surveys that are trying to be more focused on specific sectors, right, and, with that, we increase precision, for sure, and hopefully accuracy as well, but there is a reason why MRIP doesn't really conduct the general MRIP survey, right, to all the anglers that are in for-hire vessels, for example, and they have their own little survey that is more specialized.

There is something else that MRIP conducts that was developed to be more specialized that is called the large pelagics survey, saying, well, that sector -- Richard, correct me if I'm wrong here, and feel free to jump in, but that sector of the fishery, right, is not captured as well by a general survey like MRIP, and so development of these specialized surveys over time was trying to create more specialized sampling frames, and more focused sampling strategies, for specific sectors that may not be as well sampled, right, by a general survey, and so, you know, the MRIP is still being conducted in Florida for all the other species, but the idea is that, you know, only about, what, 10 percent, perhaps, or 15 percent, of all saltwater fishing trips in the State of Florida are focused on reef fish.

All the others are actually focused on the inshore species, right, and so when you have a draw, a sampling draw, right, that is generalized, it's not going to be as focused and specialized for that specific sector, and so, for this, we worked with MRIP, during the development process, to make the two integrated, right, and that's the dockside APAIS part of the survey.

DR. MICKLE: I understood that part of it, but I was trying to get to the point that was made earlier about effort and the MRIP working with the state survey to try to understand why the efforts are so inflated in some surveys, but, specifically, a reef fish focus is a good effort, in that part of it, but trying to understand that, and there are other unknowns, and some states don't do the effort survey, but they're still massively inflated, and so I'm trying to figure out, from a methodological perspective, maybe how calibration can be looked at in a different sense, if that makes sense, but I will hold my correlation questions for at the end, when all of the presentations are done, because it's more -- Thank you.

CHAIRMAN NANCE: Thank you. Harry, please.

MR. BLANCHET: Thank you, Mr. Chairman. On this table that you have up here right now, I wanted to focus on four ratios. Looking

at the SRFS to the FES landings, in numbers of fish, you've got two time periods, the 2015 to 2017 and the 2018, 2019, and 2021 time periods, and so the earlier ratio, in terms of numbers of fish, was 0.4. The more recent ratio is 3.6, and so, essentially, if I am reading this correctly, the SRFS estimate, at this point, is a smaller fraction of what FES is saying.

Now, if you go up to the top, and look at that same ratio. for landings in numbers of fish, compared to the CHTS, the earlier time period, 2015 to 2017, has a ratio of 1.14, and the later time period has a ratio of 1.29, or higher, and so, in my simple mind, I am seeing the difference in the direction between the two surveys.

In CHTS, essentially, that ratio is going up, and, in FES, that ratio is going down, and there is two issues that I can't simply come up with. First off, in the FES, in the later time period, the FES number of surveys that they sent out increased, and so there could be some difference in that, or is that just -- I mean, looking at those ratio PSEs, there is essentially no change, but, if anything, the trend is downward, but, with the CHTS, the trend is upward, and so the question is, is that real, or is it purely a matter of the challenges with using modeled estimates of the CHTS in more recent years? Thank you for your time.

CHAIRMAN NANCE: Luiz or John.

DR. FROESCHKE: One thing that is related this is is, when I looked at the landings data in CHTS and FES, by year by state, in Florida -- Well, in Alabama and Mississippi, essentially, that ratio is stationary. It's variable, but stationary.

In Florida, it is trending, meaning that the ratio between CHTS to FES is essentially doubled in the time period, and so I think that's what is causing this divergence, and I asked Dr. Cody about that, and I think that -- He can fill in the blanks, but essentially, it's the way that the model-based projections are going forward, and there's probably some variables in there, which I don't understand, but are causing this, and then, as you go farther away from those calibration years, there is additional uncertainty, just like any projection or assessment. I am not sure what problems that could cause in this whole paradigm, but, yes, we've discussed it, and it will be interesting to see what you guys think.

CHAIRMAN NANCE: Thank you, John. Luiz.

DR. BARBIERI: John, on that point specifically, right, is this

issue of using -- If we're going to have to convert to CHTS, right, using the model calibration to convert back to CHTS, or we, as an SSC, continue using what we had previously recommended, where the calibration was based on the actual benchmarking period, and this is why I asked that question before, because there are all the different options to be considered, right, before the SSC.

The first is is the methodology, you know, robust and acceptable, and then which one of those time periods does the SSC believe best represents the data for that calibration to take place.

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

DR. CODY: I will just make a point that the calibration model, as I mentioned earlier, accounts for declining trends in the CHTS, and so, in recent years, the component that captures that most effectively was the cellphone component, and so as we expect response rates to the survey to decrease, and the survey to become less representative of the general population, that trend would continue, and so the ratios -- It's not too unexpected that those ratios would increase over time.

CHAIRMAN NANCE: Thank you. Jason.

MR. ADRIANCE: Thank you, Mr. Chair, and I'm going to apologize, but I'm going to go back to methodology, and I just had a question about the dockside. How does that work? When you get an intercept, are certain intercepts FES, and certain SRFS, or is that one intercept going to both? Thanks.

MS. CROSS: Sure, and so the dockside intercept assignments are drawn at the same time, and so the SRFS intercepts have their own assignments, and the MRIP assignments -- They're completely separate, but they're drawn at the same time, so that they can be combined, and the sample weights are comparable.

I don't believe that they overlap, and so a SRFS assignment is -- Those interviews collected during that assignment are SRFS, and the same for APAIS, and they're not -- The same assignment isn't -- Like those interviews from an assignment aren't going to both, and so they're not doubling, right, and they're completely separate. They can be combined, and the sample weights are combined, and we had designed it that way on purpose, so that we could maximize the amount of data that we're getting to improve the precision of the estimates.

CHAIRMAN NANCE: Richard, to that point?

DR. CODY: I just wanted to follow-up on Tiffanie's description there, and, basically, what happens is that the draws are done simultaneously, to allow for improved efficiency. The designs are not impacted by the actual draw, and so a SRFS assignment is a SRFS assignment, and an APAIS assignment is an APAIS assignment, and they are drawn separately, in that respect.

What happens with SRFS is they can use the APAIS information to improve precision, and we don't do that with our survey, because it wasn't designed that way, and there may be a potential, later on, to do that, but that's basically -- It's an efficiency thing, but also a coordination included into the draw, so that we don't get overlapping assignments of APAIS and SRFS, and we can avoid that.

CHAIRMAN NANCE: Thank you.

DR. CODY: So there are certain criteria that are applied to the draw, and then we do that -- The draw is run many, many times, and the survivor draws are the ones that are used for the final sample allocation.

CHAIRMAN NANCE: Sean.

DR. POWERS: Building on Paul's question, and I will ask this to the other states too, but have you explored what you would need to do in the SRFS estimation to get it to produce FES numbers, to get those numbers to elevate and go higher with FES? Here, what I'm thinking about is -- My understanding is that the intercept data really doesn't vary that much, weights, retained catch, and all of those things are about the same, and so it's obviously in the effort, but have you all figured out what is in -- I mean, is it strata, or is it different weights given? I mean, I guess that's another way to get at Paul's answer, is how you manipulate the SRFS to actually get the FES answer.

MS. CROSS: Sure, and so we have embarked on a pretty lengthy endeavor to look at a lot of different things that could be causing the discrepancy between the effort estimates of the two surveys. We have created a simulation model that looked at both sample size and different ways of stratifying, and we learned that it wasn't really the stratification, and so we could choose to not stratify our survey, or MRIP could choose to stratify their survey, like us, and it wouldn't change things much.

Improving the sample size, or increasing the sample size, of MRIP could help us with better precision, but, overall, it didn't really change effort estimates. We're also run a side-by-side tests and

modeled a -- It was a shortened questionnaire that was basically testing, if we just asked people -- Instead of running them through and kind of like walking their memory through -- Like showing them the calendar and saying mark the dates that you took a trip, and, instead, we did something like how many trips did you take last month, and how many trips did you take in the last two months, and so we did this by wave.

The first month of a wave, we asked folks what they did in the prior month. On the second month of the wave, we asked half of the people what they did in the prior month, and the other half of the people what they did in the prior two months, to see if there was like this cognitive bias, and this telescoping issue, and we did find a difference.

The people that were asked, in general, how many trips did you take over the last two months, their estimates of how many trips they took were elevated, compared to people who were given a calendar or asked about the prior month, and so I think that there's something there for the type of question being asked, and like framing the timeframe that you're asking about.

DR. POWERS: Refresh my memory, and what's your timeframe, versus FES's timeframe?

MS. CROSS: We ask people what they did in the prior month, and we provide them a calendar, on the front page of the survey, that they actually mark-in, and so it's really like they're interacting with the calendar, and they're not just glancing at it and like -- They are literally an X in the box of the day of the calendar that they took a trip, so that they can see the calendar and, you know, different things will jog their memory about what they did in the prior month.

DR. POWERS: How does FES do it? Do they just ask for number of days in the wave?

MS. CROSS: Yes, and so, like Richard was saying, in the FES questionnaire, it's a general questionnaire that -- The FES questionnaire starts out by asking very general questions about how you consume, the weather, and a bunch of other common things that the general public -- Their survey frame is the U.S. Postal Service list of households, right, and so they're trying to appeal to a wide general audience.

The people go through these questions, and then the last two questions say, in the last two months, and I am paraphrasing, and I don't have it verbatim in memory, but, in the last two months,

how many trips did you take from a private boat, and, in the last two months, how many fishing trips were based from shore, and it's just you write your number in, and there is a little picture of the calendar, and it's small.

DR. POWERS: So that's getting at what I'm -- So you actually think that there is a data difference, and it's not -- It looks like you looked at stratification, and I don't know if you all looked at weighting differences, but it seems like you think there is, at the frontend, a legitimate data -- That might have to do with recall bias.

DR. BARBIERI: Well, I'm sorry, but let me jump in here. Just because there is an effort now, and Tom can speak more about this, taking place, and so MRIP has put together, right, for a while, but it's now active, but this transition team, right, that is looking, in a more structured way, about how to go about understanding those differences between surveys and how that's impacting the results.

The team of statisticians were presented, the MRIP consultants, they were presented with all of the designs, all of the data, and all of this discussion took place, and they themselves, at this point, decided there is no way to get to that answer without collecting additional data and having additional research done, and so the transition plan now involves two components.

There is a calibration component being done to address the short-term needs for management and assessment, and there is a longer-term component, and Tom is involved in that, that is trying to work with the different states in developing research projects, studies, that will be addressing -- It was a data-based, analytical approach used to evaluate those differences, because they are complex, as you know, and they involve cognitive science, in a way, about the probability of people responding to questionnaires, and they are structured one way or another, or the probability of you getting different people with different demographics and age groups, and there is all sorts of complexities that need to be looked at in a structured, statistical design study, and so that's -- We're not at that point yet, and we have been conducting -- The State of Florida, FWC, has been conducting a number of studies, on the side, to try and look at some of these questions, but, more fully, we haven't been able to get there yet.

CHAIRMAN NANCE: Okay. Thank you. Jim.

DR. TOLAN: Thank you, Mr. Chairman. I wanted to return, real quickly, to the point of the assignments of the different surveys,

but, if Tom has a question to this right now, I will certainly yield.

DR. FRAZER: I will follow-up, real quick, to Sean, and so, I mean -- Luis is right, and, I mean, there's a lot of people involved in this effort, right, including the state directors and others involved. You know, Bev is involved, and Richard, and Gregg Bray, and there's a lot, and so, I mean, that has to come, but, in the shorter term, if you're just trying to get, you know, to the FES kind of equivalency question, right, my question would be, I mean, when you just look at the data, you could filter the FES data, right, to some degree, right, because we know, essentially, a quarter, or more, of that effort is accounted for by shore-based activities, right, and so you can kind of pull that out, and the Florida people already know that 15 or 20 percent of the people are fishing primarily offshore, and the other 80 percent or so are inshore, and so, when you take those things into consideration, they're actually fairly closely aligned, right, the estimates, and they get much closer to one-to-one. I don't think we've done that yet, but it's an option.

CHAIRMAN NANCE: Thank you. Jim, do you want to go ahead? I've got a list going.

DR. TOLAN: Okay. I wanted to return to the concept of the different surveys and the draws and the assignments to the interviewers, and this kind of deals with the question that I had earlier about the decline rates. Does the angler know which survey they're being asked questions about, because it's been my experience that, in some sectors, there is a much different level of trust in the data being collected by different people, and so is the angler aware of which survey they're being asked for?

CHAIRMAN NANCE: Go ahead, Richard.

DR. CODY: Both surveys -- Like I said, they're very different, and, I think, in the field -- I mean, they're done by the same agencies, but, essentially, they're very different surveys, and so I think it's safe to assume that the anglers know which survey they're being interviewed for, because they are very different in structure, but I don't know, and, Tiffanie, you can add to that if you want.

MS. CROSS: Maybe Bev can correct me, but I don't -- I don't know that we actually say like this is the MRIP survey, or this is the State Reef Fish Survey, but they are -- Like the State Reef Fish Survey intercept is -- We get right to the point of like did you fish for reef fish, and that's by design, and, like Richard said,

the MRIP survey is much longer and more in-depth about a lot of different -- Like all the species, but do we actually say like this is the MRIP?

MS. SAULS: I don't think the average angler knows what either one of those surveys are, and they just know that, hey, a biologist has walked up to me and has a survey they want to do, and we do the survey, and, I mean, most people don't know the difference between MRIP and SRFS or that there are two surveys that even exist. I am sure there are some more educated people out there who know which one they're participating in, but, I mean, the average angler -- I mean, there's no need to say you're about to be asked something for the MRIP survey and this is not the SRFS survey.

MS. CROSS: Right, and, I mean, to the average angler, they know that a State of Florida biologist is at the dock, and we're just asking questions about the trips they took that day, and, you know, the rapport is pretty good with the anglers, and so I don't know that there's a lot of discrepancy between the angler saying, oh, this is a federal survey, or, oh, this is a state survey, and I'm going to participate in one and not the other, if that's what the concern was. Like Bev said, I don't think they know they difference.

CHAIRMAN NANCE: Steven.

DR. SCYPHERS: Thank you, Mr. Chair, and so I have two questions, kind of along the lines of thinking about the differences that are coming out of FES, versus the Florida survey, and the first one is what's the context of who is being asked about their fishing effort within the household? Is it just the licensee, or are they asked to comment on others within the household, because I think that could be one of the big differences. FES asks whoever completes the survey to answer it about up to four or so other people within the household, and so it's getting an individual's observation of other individuals and not just a single person, if I'm interpreting that correct.

MS. CROSS: The State Reef Fish Survey mail questionnaire is only for the angler selected for the survey, and, in really big, bold letters across the top, the very first thing they read is this survey should only be completed by Tiffanie Cross, or whoever it's getting sent to, and so it's like one person in the household, and not anybody else, and we're very explicit about that.

DR. SCYPHERS: Thank you, and then the second question is thinking about where that fishing effort is going on, and so is it -- Am I

interpreting it correct that, for Florida, in the effort survey, you're actually asking about where they fish spatially on the map, and so you know if people live on the Atlantic coast, and are fishing in the Gulf, where they're fishing in those types of places.

MS. CROSS: Yes, and so, once they've told us that they did fish in that month, and they mark the calendar, the next question asks what they did in a specific trip, and so, for each specific trip, they tell us the date of the trip that they're talking about, so we can match it to the calendar, and then we ask them if they fished on an artificial reef, and then we say, using the map below, which region did you fish in today, and those are marked by letters, and then, depending on the region, it then asks, you know, a state versus federal waters type of question, and let me -- Would it be helpful if I emailed a copy of the questionnaire right now? Do you want to see it?

DR. SCYPHERS: The comparison -- Just to close that loop, the FES is simply asking about effort within the state and then using APAIS to partition where that effort is, if it's Gulf or Atlantic.

DR. CODY: What the FES basically asks about is effort, like you said, within the state, and the APAIS is used to partition the effort into different fishing areas, first of all, but it's also used to adjust for out-of-state effort, and so you ask, you know, the zip code of residents, or that kind of information, to get at that, and non-coastal as well, in some states.

CHAIRMAN NANCE: Okay. Thank you. Thanks for those questions. Paul, do you have a question?

DR. MICKLE: Do you all do a monetary offering in the mail survey? Doesn't the FES do like a one-dollar or two-dollars? I don't know if anybody that lives on the water is going to be running into the house waving two-dollars to participate in --

MS. CROSS: The State Reef Fish Survey is non-incentivized.

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: For Jim's question about who is giving the surveys, and what survey it is and everything else, just a comment on that, from, you know, someone who has the done the survey, and from a state who actively does it, for the most part, these guys are seeing their state biologists. Even if it's the MRIP survey, and ours are distinguishable between Tails 'n Scales and MRIP, and there is different questions, and it's a different approach, but

it's your state biologists, and most folks are very happy to see them, and they don't have too much complaint about, I would imagine the dismissal rate for these.

I think, when we looked at it in the past, and we've discussed it with the other states, it's 5 percent or less of guys who just -- You will come up to them, and they will just blurt out expletives and walk away, and say I'm not doing this today, and that's a very small amount, and so it's negligible.

CHAIRMAN NANCE: Thank you. We've had a good discussion on Florida, and we'll go ahead and take a fifteen-minute break, and we'll come back around 10:30, and we'll have then Alabama up.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: Okay. We will go ahead and start gathering back. I appreciated the presentation from the State of Florida, and we'll now -- Kevin Anson is going to give us the presentation from Alabama. Kevin, are you online?

MR. KEVIN ANSON: I am online, Dr. Nance. Can you hear me?

CHAIRMAN NANCE: You bet. Thank you so very much. We appreciate you being able to do this, and so we'll go ahead and turn the time over to you.

ALABAMA

MR. ANSON: Thank you, and I appreciate the opportunity to discuss the potential for updating the current red snapper calibration ratio, and I appreciate the SSC members' time in discussing this issue and the amount of time the council has devoted to the states to discuss the issue. Also, I want to extend an apology for the late submission of the report and the presentation that I'm going to give right now.

As background, and Ryan talked a little bit about this during the Florida presentation, but the SSC approved the current calibration, which used data from the years 2018 and 2019, the MRIP-CHTS to Snapper Check harvest estimate ration, and that is currently at 0.4875.

The council requested the SSC to review updating the calibration ratio, and the draft proposal was submitted for review by the Southeast Regional Office, the Science Center, the Office of Science and Technology, as well as council staff, to provide some comments, and it suggested several things, and one of those was to

provide some options for removing 2020, as well as looking at some longer time periods, and so I'll address some of these comments now, which kind of drill-down to what our preferred, or recommended, calibration ratio would be.

As was discussed during the Florida presentation about 2020 and COVID, we did not experience some of the things that occurred in Florida, relative to the assignments, the sampling activities, and we essentially started back our normal operations in May, and, by certainly late May and June, when the snapper season started, we were back in full operation, and use of a longer Snapper Check time series may not be appropriate, and, again, that was a recommendation.

Snapper check data -- We began the program in 2014, and we did not receive MRIP certification until 2017. We had to make some adjustments to the way we accounted for anglers during field assignments. In the early years, we did not capture the amount of angler activity, and that was something that had been recommended during one of the CHTS reviews, the MRIP reviews, by consultants, and it basically is used for developing the proper weight that is assigned to the individual assignments, essentially, or the individual interviews that are collected during the assignments, and so we had not been doing that in those first three years of the survey, but we implemented those changes in 2017, and that's when consultants agreed with the methodology and we received MRIP certification.

Again, we prefer not removing 2020 and keeping 2020 in our analysis, in the ratio. Dr. Richard Cody provided a summary of the sampling activities for APAIS during an April 2021 council meeting, and he had shown some performance relative to the percentage of intercepts that were being collected, the amount of lengths, and the amount of weights that were being collected in the field, by state, for all of the states where APAIS was conducted, and so we included the east coast as well, and Alabama, again, for weight, and for intercepts, those two metrics, Alabama was fairly comparable, in 2020, with previous three years that were used.

We did not do well in lengths, and that's partly due, or probably due, to the instructions that were given to field samplers, in order to maintain social distancing recommendations, and the distance between the sampler and the angler within six feet, of course, was not observed, but, generally, if the opportunity arose for the sampler to get biological information, after receiving approval from the angler to do so, in order to reduce time, the samplers focused on collecting weights and not lengths, since

weights are used primarily for management.

We are proposing to look at just 2020 and 2021 for the updated calibration ratio, and this is based mostly on some of the discrepancies that might be occurring between, or within, the dockside survey, and it's probably due to periods of high angler activity when assignments are conducted, and those periods of high angler activity can change over time, and here, in the last -- Certainly in the last couple of years, but, over the last five to six years, as the number of days the season has been open for red snapper, the proportions of anglers that are accessing sites has gone down, and so I'll get into a little bit more about some of the specifics relative to what the responsibilities of samplers are, and the performance related to the number of intercepts that they're collecting in the field, a little later.

Suffice it to say that sampling discrepancies, or inefficiencies, could lead to an inappropriate adjustment, or weighting, of the effort data, and we had some good discussion, during the Florida presentation, about the mechanics of how the APAIS survey is conducted, and I'll talk a little bit about how we conduct the Snapper Check dockside intercepts here momentarily, and the 2020 and 2021 data are more similar than the 2018 and 2019 data, in that they're a little bit more consistent, and, granted, it's a short time series, and I understand that, but it also is, I think, just more generally reflective of where the fishery is now and where it might be going forward.

I will be looking at, Dr. Nance, for you to just -- Certainly, if anyone has any questions throughout the presentation, just like as in Florida's, I will be more than happy to answer them at that time.

CHAIRMAN NANCE: Thank you so very much.

MR. ANSON: The Snapper Check summary, the Snapper Check is comprised of a mandatory reporting program and a dockside survey, and so, in the mandatory reporting side of the program, which is where we get the effort, the vessel representative, which is, for regulatory purposes, is either the captain or the owner, is required to submit a landing report before red snapper are landed in Alabama, and so we do not necessarily collect dead discards in-season or out-of-season, but we do receive some reports whereby there are no landed red snapper, but there are reported dead discards, but there is no reporting requirement for trips that occur with dead discards.

That's where we get the raw, or base, number of trips, and then we

perform a dockside survey, whereby we attempt to intercept vessels with red snapper to collect biological information, and trip information, and the trip information is used to quantify non-response, and so we try to attempt to match the data that we collect at dockside to the reported data from the anglers, and so, in each of the reports, the angler report, as well as the dockside report, there is specific information that we ask, and collect, and that is the vessel registration number, the date, the number of anglers that are on the trip, number of fish landed, the general time of the interview, and that's compared to the time that the landing report is submitted.

Early on in the survey, we allowed for a phone, web, and paper reporting, and, in each of those instances, at least electronically, when it was phone or web, the time would be collected at the time of the report, and, on the paper report, at the time, we asked the time of the landing, and so we would have that time, and those pieces of information would be, you know, compared to one another, through an algorithm, and that is where trips would be identified as matching one another or not matching one another, and then that status of matched and unmatched trips would then be used in a proc survey means statement in SAS, and we do that, a proc survey means, for number of fish landed, dead discards, and anglers.

This is the reporting frequency, based on that matching routine from our Snapper Check interviews, and so there is an error here in this graphic, as well as one a little later, unfortunately, and I apologize for that, but this has the two modes that are covered under Snapper Check and are included in our calibration ratio. We have the charter-state, and that is, in our accounting of state charter vessels, we use the state license database, and we also then compare that to the federal permit list for federally-permitted charter vessels, and so any vessel that has purchased a state fishing license, but does not have a federal permit, those vessels are deemed as state charter vessels.

You can see there that that's the blue, solid blue, line, and their reporting rates have ranged anywhere from about 40 -- A little over 40 percent to nearly 70 percent in the time series. I included 2014, 2015, and 2016 in here, just for context, and, again, those years were not MRIP certified.

Then you can see the private-federal, and that is -- It's represented as the dark-blue solid line down in the legend, but it's really the dotted line, and that private-federal is for vessels that are encountered at the dockside surveys that are conducted when the federal waters were open, and then the private-

state is for those years where we had a specific state season, but you can see there, for the private vessels, we had some drop-off in reporting from 2014 to 2015, and that may have coincided with perceptions among anglers that the state was conducting this new survey, with the anticipation, among some anglers, that access would be increased the following year, and access was not necessarily increased the following year, at least for the federal season, and so we may have had some dissatisfaction among some of the anglers and with non-compliance, as far as the reporting side of things, but complying at the dockside survey.

As was mentioned earlier for Florida, and I believe that Trevor also mentioned it -- Our state folks, they have a uniform, and the uniform identifies them as working for the Marine Resources, and we conduct both the APAIS survey and the Snapper Check survey with the same samplers, and they're dressed the same.

CHAIRMAN NANCE: We have a couple of questions, Kevin.

MR. ANSON: Go ahead.

CHAIRMAN NANCE: Will, please.

DR. PATTERSON: Thank you, Mr. Chair. Hi, Kevin, and I had a question about this figure. On the Y-axis, it says "frequency", and you have proportions here, and are these proportions of boats that you have information that they exist in these different categories of fishery, the recreational fishery, or are these the percentage of trips that you've somehow estimated, where the participants, or the captain, has actually completed a survey?

MR. ANSON: It's similar, and it's the proportions of the vessels that we interviewed, or observed, in the field that had red snapper that also had a matching landing report associated with it, and so it's the frequency of the reporting.

DR. PATTERSON: So for individual trips and not just for vessels.

MR. ANSON: These are for vessels only. This is just for vessels. Our basic unit is a vessel, and that is how we kind of do the matching, is through the vessel and using the vessel registration.

DR. PATTERSON: Okay. One last question. This says the frequency of reporting for a vessel that is encountered on a given day, or is this across the entire season?

MR. ANSON: It's for the entire year, but within each of those groups of anglers, or vessels, within the season, and, again, for

private, we've broken it down, or segregated, federal seasons and state seasons, but, for charter, it's strictly those vessels that have a charter license, but do not also have a federal permit associated with that vessel.

DR. PATTERSON: Okay. Just one last follow-up then. So some vessels that are in the data here, in the given year, could have been sampled one time, or they could have been sampled many times?

MR. ANSON: That's correct. There were instances, and not so much on the charter -- Well, we may have had a couple of vessels that were sampled a couple of times. Certainly in the private recs there were -- I think, in one year, there was an instance where a vessel, or two, were sampled three times in the same season.

DR. PATTERSON: Thank you.

CHAIRMAN NANCE: Jason.

MR. ADRIANCE: Thanks, Mr. Chair. Kevin, I think you answered this, but so this is -- These are declared Snapper Check trips that you encounter when they come back in, correct?

MR. ANSON: Well, they're declared to the point that they've submitted a landing report, and so we ask -- When we conduct the dockside survey, we have basically a screener question as to whether or not they were fishing, and then, if they were fishing, we ask if they were -- Now we ask if they were reef fish fishing, but, you know, early on in the survey, we ask if they were red fishing, and then if they have red snapper onboard. If they have red snapper onboard, then we would complete the interview, because, again, a landing report is only required for landed fish and not for engaged in snapper fishing, or have caught red snapper, but did not bring any back to the dock.

MR. ADRIANCE: Okay, and so they may not necessarily have started out as a Snapper Check trip, but they had red snapper, and is that correct?

MR. ANSON: Well, yes. I mean, if they came back to the dock, and they had red snapper, they would -- And they allowed us to, you know, answer the rest of the questions that we use for matching against the landing report, then they're considered a red snapper trip.

CHAIRMAN NANCE: Okay. Thank you. There is no more questions, Kevin.

MR. ANSON: All right. Here is the amount of interviews that were collected over the period 2011 through 2021, and, again, 2011 was included just because there is some additional information that I provide here in the presentation for context, and, again, 2014 through 2016 is non-MRIP certified, but it's provided here, and these are the Snapper Check interviews represent an interviewed vessel, and APAIS interviews represent an interviewed angler.

You can see here that these are the number of trips that were measured in each of the surveys, and then the number of relative anglers, or the number of anglers that had red snapper as part of their catch and those that did not, and you can see, in 2017 -- You can see the proportions of those that did not have red snapper, because we had that methodology, that protocol, change that required us to count all of the anglers, and we had not been doing that in the three years prior.

One other thing to note on here is that these are assignments that -- For Snapper Check at least, these are assignments that are primarily assigned and conducted during snapper season, and so I wouldn't necessarily compare these one-to-one, but it's just giving some relative distributions within each of the surveys.

Again, some context from 2011 through 2021, and this provides the number of days that the red snapper season was open in Alabama, and you can see that it was primarily just a federal season from 2011 to 2013, with some decreasing number of days that were given. 2014 was a nine-day federal season, and that was the first year that the state had created a state-water season, and the state season continued through 2017.

In 2017, I will note here, it was a little bit of a different year, for those who may not be familiar with red snapper management in the Gulf, but that was the year where it was originally announced as a three-day season, federal season, and then we had announced a relatively long state season, but, soon after the state season closed, on June 3, a second federal season was announced that encompassed just three-day weekends, starting in mid-June and going through Labor Day weekend. Then, starting in 2018, through 2021, we've been under either the exempted fishing permit or the regional management Amendment 50.

Here is the harvest in CHTS and Snapper Check. In 2017, a large year, and there may be some issues related to, again, some of the dockside intercepts that were collected in there, and you can see a relatively, you know -- Outside of that year, 2019 was the next highest, but it's relatively the same. There's a decreasing harvest for CHTS here in the last couple of years of the time

series.

One of the questions that came up from that initial review was the effects of weather, and so I added this in here, just to show that, you know, regardless for either of the surveys, weather may not have been an impact here, and the dashed lines, the dotted lines, in each of the years indicate the mean wind speed throughout the season, and it's just the days that the season was open for each of these, and so, for Alabama, since we've been under the EFP, or regional management, we've been able to set our own season, and so, in 2018 and 2019, the days that the red snapper harvest was open, or available, was on Fridays through Sundays, and then, in 2020 and 2021, the season was extended, if you will, for four-day weekends that encompassed Fridays through Mondays.

Another thing that was asked to depict was the harvest, for both surveys, relative to the ACL, both the Gulf recreational ACL as well as the state ACL, beginning in 2018, when we went to regional management, and you can see here that the CHTS harvests, which are indicated there in kind of the orange color, the brown, they were relatively high in the initial time series, the initial part of the time series, and then they fell off in 2014, 2015, and 2016, which primarily was due, I think, to the shortened season, and we went to nine and ten-day federal seasons during that time period.

Snapper Check harvests have been increasing slightly, and that's due to increases in the ACL that have been enacted, and we did have a small overage in one of those years, and there was a payback for that in the subsequent year.

One thing to point out, here again, for 2017, is I mentioned that it was kind of an unusual year for how the season was established. In Alabama, in that year, just the recreational harvest, the CHTS harvest, represented about 81 percent of the Gulf recreational sector's ACL, and so 2017 -- Sorry. It had high angler activity at specific sites, and MRIP field sampling protocols may result in unrepresentative samples of Alabama's anglers, which are being used to adjust effort. I will get into that in the next couple of slides, if you don't have any questions.

CHAIRMAN NANCE: Yes, we do. Will, a question?

DR. PATTERSON: Thank you, Mr. Chair. I am curious about, in 2018 through 2021, and so you have the Snapper Check ACL, and so I guess this is through the EFP program, and the states are monitoring their own harvest, or have ACLs specific to the states, and it looks like your Snapper Check estimates of landings were pretty similar to the ACL, and is that because you guys just hit the

number, or did you have in-season monitoring and a state-water closure that explains that close correspondence?

MR. ANSON: We do -- Snapper Check was created mostly as a monitoring tool, and we, of course, had some concerns about the estimates of Alabama's harvest up to that point, but, as we were going into a period there, when the season was announced at nine days, and we looked at the prior trend in the number of days, you know, for the preceding years, we looked at Snapper Check, through the electronic reporting, and the ability to turn the data around fairly quickly.

We can turn it around now -- Actually, we can close -- This last year, we closed on a Monday, and we can generate estimates, preliminary estimates, by Friday, and so we -- Beginning in 2018, that’s what we utilized, was the efficiency in the ability to get harvest estimates and use that to forecast a closure, and that’s, in fact, what we did in 2018, is we used that to help close the season earlier than we anticipated, and we also did that in 2019, but, as you saw, the number of days in the slide previous, and 2021 was our first year where we essentially went all the way to the end of the year, and we did not have to close early, if you will.

We have not -- Here lately, we have not announced a closure date, and we’ve just been relying upon Snapper Check to kind of forecast out when a potential closure could occur.

CHAIRMAN NANCE: Go ahead.

DR. PATTERSON: In 2021 then, was there a drop in the catch rates? Does that explain why the season didn’t close before the end of the year?

MR. ANSON: There was a combination of several things. There was a drop in the catch rate, and there was a drop in the relative size of the fish, compared to earlier years of the 2018 to 2021 time series, and, generally, just less overall trip activity amongst the days as well, angler trips.

DR. PATTERSON: Okay. Thank you.

CHAIRMAN NANCE: No more questions, Kevin.

MR. ANSON: All right. Thank you. APAIS dockside sampling in Alabama, this is generally -- I mention Alabama, but there were methodological changes that occurred throughout the APAIS coverage, but there was a change, in 2013, to the dockside survey,

and, basically, it required samplers to count all anglers during a six-hour assignment.

Up until that time, samplers were given the instructions that they were to go a site, and, if they couldn't get one intercept per hour, then they could move to an alternate site in the same mode that was next closest to the original site that was selected, and so that afforded a lot of flexibility to the samplers, and it was one of the critiques that were made during the review at that time.

Then another change was they -- Well, what was also required is samplers were trained to approach potential anglers to determine survey participation and eligibility, when time allows, but their main focus is to count anglers during this change, in 2013, and so, while conducting individual angler interviews, the sampler must continue to monitor angler activity, and so, basically, what this does is, for sites with high activity, you could reach a point where most of the sampler's time is spent counting anglers and not interviewing anglers, and that can become a problem if the sites that are sampling from are not really representative, or are different among one another, and the inability to collect interviews, at those sites that may be different, compared to the other sites, could lead to an unrepresentative sample.

We talked a little bit, earlier in the Florida presentation, about the residency status, not only within the state, but then also within the coastal zones, and that's collected from the dockside survey, and that is used to adjust those trips from the telephone survey, or the FES survey, that is used currently, and the following slides are the kind of results of some analysis that I had done to kind of show the impacts of that.

CHAIRMAN NANCE: Sean has a question, please.

DR. POWERS: Kevin, so the priority is counting anglers and then interviewing them, and why is that the priority? I mean, because effort is coming from another area, and the surveys and everything, at least in the FES system -- Why isn't interviews the priority?

MR. ANSON: I can give my -- I can give an answer, but maybe, Dr. Cody, if you want to address that.

CHAIRMAN NANCE: Richard, go ahead, please.

DR. CODY: Well, I would say that one isn't given priority over the other. We need both pieces of information, but, obviously, we need the number of anglers at the site to get a proper weight for the interviews that are conducted. Obviously, you want to get

more interviews, but you do need both pieces of information.

CHAIRMAN NANCE: Yes, please, Sean.

DR. POWERS: So that count isn't used at all in the effort, and it's just simply you're using it to figure out what percentage of the anglers actually get intercepted?

DR. CODY: Correct.

CHAIRMAN NANCE: Thank you. Okay, Kevin.

MR. ANSON: All right, and so here are the following -- These two graphs here depict the number of anglers that are either counted or interviewed over the time series, in open and closed seasons, and during Waves 3 and 4, in Alabama, and so the graphic to the left -- On the Y-axis is the mean anglers counted, and so, again, the number of just general anglers, regardless of what species they're targeting, but just the number of anglers that are finishing their trips and coming back to that particular site where the assignment is being conducted.

Then, down on the X-axis is, within Waves 3 and 4, those assignments that are conducted in the closed and open seasons and their corresponding mean number of anglers counted per assignment, and then the colors there indicate the county that those assignments were conducted in, and so, in Alabama, we only have two coastal counties, Mobile to the west and Baldwin to the east, closest to Florida, and you can see, early in the time series, that the mean number of anglers that are counted, per assignment, in either the open or the closed season, is fairly similar, and it's, you know, roughly fifty anglers counted during that time.

Then, as you go through time, particularly with the change in 2013, we see a much larger number, mean number, of anglers being counted during the red snapper season, versus those other days in Waves 3 and 4, where it's closed, and the proportions there, you know, remain fairly high, and skewed towards the open season days, relative to the closed season days, and you can see there, following the colors, that Mobile County, for the most part, has the majority of anglers being counted during those assignments, particularly during the open season.

CHAIRMAN NANCE: Luiz has a question on that one, Kevin.

MR. ANSON: Okay.

DR. BARBIERI: Thank you, Mr. Chairman, and thank you, Kevin. Just

real quickly, are you aware of differences, or expected differences, in catch rates between anglers from Baldwin and Mobile Counties? How would you interpret how this would impact potential results?

MR. ANSON: So there is a difference in catch rates, and there is a difference in size between Baldwin and Mobile of red snapper catches, and, generally, there is a higher catch associated with Mobile County, and a larger fish associated with Mobile County trips.

I don't have the exact numbers for that, but that is generally the difference, and so there was -- During the Florida discussion, presentation, there was some discussion about the research planning team and talking about various issues that could be explored between the APAIS and state surveys, and, certainly as it relates to the calibration issue, these are some things that, you know, we need further analysis, and my offering here today is to explain that there is -- There is the potential for the sampling, the dockside survey sampling, protocols to be contributing to this, but I don't know the full extent as to whether or not all of those differences can be accounted for just between this or they're reduced, or increased, based on other factors, but there is a -- To follow-up on your specific question, Luiz, yes, there are some discrepancies, and Mobile anglers tend to have more red snapper, and they tend to have larger red snapper.

DR. BARBIERI: Okay. Thank you, Kevin.

CHAIRMAN NANCE: There is no other questions.

MR. ANSON: The graphic then to the right is the mean number of anglers that --

CHAIRMAN NANCE: Kevin, it looks like we have on online that I didn't see, and so Harry has a question.

MR. BLANCHET: It was a comment. On the right here, you're missing the right-most column, and it is in the report, but just for those people that didn't see it. I did have a question about -- So you're talking about differences in the size and catch rates between the two sides of the bay.

I mean, those guys are going out the same pass, and what do you think makes the difference in the biological component of the harvest between Baldwin and Mobile? I mean, they're going out the same way.

MR. ANSON: Well, my opinion is, and I speak -- With the understanding that I'm speaking to a room full of scientists who have spent much of their careers on studying this species, but my -- Just to answer the question simply, it's that I think it reflects two things. A little bit of skill, if you will, and I mentioned that earlier, about potentially on the harvest rates, and then also the productivity of the stock itself, and I just think that there is enough of a difference, in that small geographic scale, that the productivity of red snapper is noticeably higher in the west, off of Alabama.

MR. BLANCHET: So, essentially, what you're saying is that the folks from Mobile County have a tendency to hang a right when they get out in the pass, and the ones from Baldwin tend to hang a left, and so they're fishing different areas, or did I misunderstand?

MR. ANSON: Well, no, and they are fishing different areas, but within a very small geographic scale. I mean, generally, the anglers go south from each of their respective locations, not to say some that go from Perdido Pass and Baldwin County, which is on the very eastern side of Baldwin County, on the Florida border, and not to say they don't go west, but certainly a lot of those do go south, or maybe go left, you know, south of Florida waters, but, just in that small distance, I believe that the -- There is differences in the angler abilities, but also differences in the productivity of the stock.

MR. BLANCHET: Thank you.

CHAIRMAN NANCE: Jason, please.

MR. ADRIANCE: Thank you, Mr. Chair. Kevin, given the discrepancies in these two counties, as you mentioned, in relation to the fish, do you think this is contributing to your recent trends in mean size and mean weight, or is that biological sampling a little more equal between the two counties?

MR. ANSON: Well, as far as our sampling goes, I believe, you know, that we had a -- We are more representative, our sampling, for the biological lengths and weights in Snapper Check, and they're more representative for each of the two populations of anglers, if you will, and so, you know, as I mentioned just a little bit ago, these are some deeper issues that I think still need to be fleshed out, but, you know, when you look at the longer time series here, and the changes in the survey, at least the APAIS survey, and you look at the amount of harvest that's being estimated to be taking place, relative to the amount of fish that are available, based on the ACL, there's just some -- There's just some numbers that I think

are hard to match, and so I don't know, and I hope that I answered the question.

CHAIRMAN NANCE: Thank you. Will, please.

DR. PATTERSON: Thank you, Mr. Chair. This is an interesting question that Harry raises, and Kevin provided some not data, but information about estimates of catch rates, and mean size of fish being higher in the western region off of Alabama than the eastern, and I'm wondering if the work that Sean Powers' group has been doing, before the season versus after the season, surveying artificial reefs in that area, if they see the same dynamics or if, maybe before the season, they're similar densities and sizes, but, after the season, the east looks different than the west does, perhaps due to effort, especially the for-hire sector, out of Orange Beach, fishing more to the east than to the west, and I'm just curious if there's any data that would suggest that.

CHAIRMAN NANCE: Sean, please.

DR. POWERS: Sure. Thanks, Will, and I don't know if we've looked at before and after and segregated it east and west. I do know that the average size, right now, of red snapper throughout the season is lower closer to shore off of Orange Beach. I mean, I interpret that -- That could be productivity, as Kevin talked about, but I think it's because those reefs off of Orange Beach, particularly those more shallow-water ones, get fished more heavily.

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: I was just going to add in here, and it's not necessarily a question for Kevin, but it's something that you're going to hear about in our presentation, and, when you're talking about the differences on the county level, and selection and everything else, this also ties into not just the metrics of what anglers are catching, the size of the fish they're catching, but it also deals with the proportions of area fished.

Now, the weighting that is used within the survey adjusts for that, but to what degree it adjusts, like what was presented in the MRIP trainings, and, you know, it helps scale it in, but, for our state, and it could possibly be for Alabama, right, it could be to a point where the weighting doesn't adjust it all the way to the point where it gets back to what you would expect it to be.

In reality, it can't control for that much, just because of the design, and so, while we're talking about county-level differences

and everything else, there's multiple variables and ratios at play, outside of just the number of fish caught and the size of those fish.

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

DR. BARBIERI: Thank you, Mr. Chairman. Kevin, just to supplement the previous point that I guess Trevor made, so are the two sets of anglers from Mobile and Baldwin Counties returning to the same access point, or are we talking about two different access points in the APAIS survey, because, you know, for me not being that familiar with the geography of Alabama, I was assuming that those two were two separate access points, with different avidity levels, I would guess, or fishing pressure.

MR. ANSON: Good question, Dr. Barbieri, as always, and I forgot to mention that, and I should have, and the sampling sites that we use in Snapper Check to conduct the dockside surveys are the same sampling sites that are selected for, or potentially selected for, APAIS draws, and, as was mentioned during the Florida survey, you know, they are done at the same time, and they are using very similar information, based on pressures, and, in fact, I would say that the majority of the site month, or wave, pressure counts are identical for each of the draws, but they are done at the same time, and they are done by staff in the Office of Science and Technology within NOAA, and they are done to promote efficiencies, more than anything else, as Dr. Cody mentioned earlier, about making sure that, you know, sites are not selected on the same day, at the same time period, and then you've got --

Only one survey then is selected for conducting the assignment, and so, just to promote efficiencies, we use the same -- So, essentially, the same anglers are being counted, or have the potential for being interviewed and then counted, if you will, as far as catch rates and those types of things.

What I am attempting to just show here, in this slide and the next slide, I believe, is just the -- That the proportions of those anglers, relative to their residency status and how that information then is used in the APAIS survey to adjust effort, is potentially a problem, and I would just continue on with that, once we're ready, Dr. Nance.

DR. NANCE: I think we're ready to move on.

MR. ANSON: Okay. Great. Thank you. I don't think I have quite finished discussing the one on the right there, the graphic, but so the one on the right is the mean anglers interviewed, on the Y-

axis, again, and open and closed seasons on the X-axis, and Harry was correct in noting there that I'm missing there, in 2021, and my apologies, but you can see there that here, at least in the most recent years, the number of those anglers that are being interviewed in Baldwin County, relative to those in Mobile County, in either season, but specifically in the open red snapper season time period, is not in the same proportions as those that are being counted at the assignment, or those that are being observed at the assignment, as it's shown in the graphic to the left.

The following two slides are a breakdown of the residency status, and that's as it occurs as either a coastal county resident, a non-coastal county, but same state, Alabama non-Baldwin and non-Mobile County resident, and then out-of-state residents, and you can see the -- This is just for Waves 3 and 4, and, again, Waves 3 and 4 were selected just because that's the heart of the red snapper fishing year, if you will, and the graph there on the left is the percentage of interviews that were collected, on the Y-axis, and Baldwin and Mobile on the X-axis, and so, from 2011 through 2021, you see those changes.

I will note, in 2017, you can see the large number of anglers, and about nearly 70 percent are being interviewed in Baldwin County, and then you can see the large percentage of those anglers that are non-coastal, and a relatively large number of out-of-state anglers also represented there.

Then, in 2019, we had a large number of non-coastal residents, proportion, that were being interviewed, and you can see just the -- In Mobile County, there's just not a lot of those non-coastal, out-of-state anglers that pass through those sites where those dockside surveys are being conducted, and then the graph to the right there gives the annual, and so it's Baldwin and Mobile County interviews combined, and it gives those same proportions based on the resident status, coastal and non-coastal, and out-of-state. You can see that 2017 and 2019 are the highest years for the non-coastal and out-of-state anglers being interviewed at a state level.

CHAIRMAN NANCE: Will, please, a question.

DR. PATTERSON: If we could go back to the previous data slide, and so, Kevin, in pointing out these differences, are you suggesting that you think there's a bias here, or could it be that the data just reflect how the fishery fluctuates a little bit between years?

MR. ANSON: I'm suggesting that there is a bias, based on the

previous slide, where I showed the mean number of anglers that were being counted, and so those are angler trips that are actually occurring during the assignments when they're conducted, and then, of those, based on those proportions at least, there appears to be a large proportion of anglers that are being counted, and interviewed, in Baldwin County, here in the more recent years, and so there potentially could be a bias in the effort estimate that's being calculated.

Again, Luiz asked the question, which basically we're sampling the same anglers, you know, during the same times of year, when the season is open, and so we will be able to, you know, for the most part, capture some of the differences in trips, albeit because of the number of anglers that are being collected in Baldwin County, there is probably a discrepancy there, but I think the majority of the difference is occurring because of the weighting that occurs to the raw effort, the raw trips, that are being generated from the Coastal Household Telephone Survey, or the mail survey.

DR. PATTERSON: Okay. Thanks.

CHAIRMAN NANCE: Okay, Kevin. No more questions.

MR. ANSON: Thank you. Just some conclusions here, and 2018 and 2019 may have been impacted by elevated effort estimates caused by sampling that was not representative of Alabama's anglers, and the angler effort has been significantly reduced in 2021, and carried over into 2022, and we also had the year go all the way to the end of the year, and we did not reach our quota, and, in fact, we are under 50 percent of reaching the quota this year, but the number of days has increased 340 percent, and we have only experienced negligible increases to the ACL.

Having a sufficient ACL, we believe, will help minimize the need to set seasons that are so short that basically they will turn into derby fishing seasons, or the anglers will revert to a derby behavior that we did experience during 2014, 2015, and 2016, and the first three days of 2017, that first short season, and so, if we were to apply the current calibration ratio, that 0.4875, and use our current ACL, we could be looking at a twenty-day season next year, using effort estimates similar to 2018 and 2019.

I don't know if that will actually occur or not, because anglers have grown accustomed to, you know, a longer season, and so that could have shifted their behavior and their needs.

The issue with reduced sampling efficiency, again, needs further investigation and should be included in upcoming MRIP transition

team topics of research, and just I've got a few slides at the end of this presentation from the report, but they are the options that, again, are from that original draft proposal, and, based on the comments and such from the reviewers of that draft proposal, I did -- If you want to advance to the next two slides.

There is Calibration Option 1, which is using the entire time series of 2018 through 2021, and then there is various sub-options there. We offered a ratio of the mean, or mean of the annual ratios, to kind of look at that and see what the effect would be, or what the calculation would be, and then also used the four-year time series, but removed 2020, and, again, we are not requesting to remove 2020, because we feel like we had comparable sampling during the entire red snapper season.

This is Option 2, and this is the one that we prefer, again just looking at 2020 and 2021 data only, and then the two methods within the simple method, calibration method, of looking at either ratio of the mean, or the mean of the annual ratios.

This is Option 3, which is using the state survey data, Snapper Check data, for the entire time series, and it was recommended for 2015, and that's when I believe the other states, Florida and Mississippi, began theirs, and we had started ours a year earlier, but, again, 2014 through 2016 is not MRIP certified, and so we don't suggest using data at least for 2014 to 2016, and, at the time we had performed the original calibration ratio, using 2018 and 2019 data, we did not prefer using the 2017 data, because of the high catches that were shown there, and then that -- The change in the season structure, with an announced three-day season and then following-up, after the season had closed, with an additional thirty-nine days for the federal waters to be open, and we just felt like there was too much noise in that, in the season, and that concludes my presentation. Thank you.

CHAIRMAN NANCE: Thank you very much. That was an excellent presentation. Are there general questions from Kevin's presentation? Sean, please.

DR. POWERS: So, Kevin, I will ask you the same one that I asked Florida, and so, when the consultants for MRIP got involved, they suggested some changes, and when were those changes fully implemented, and what -- I mean, were any of those changes what you would consider major and altering the Snapper Check estimation?

MR. ANSON: So they were implemented prior to the 2017 season, and, again, they encompassed basically a full accounting of all of the angler activity that occurred during the six-hour assignment,

and that was to match the change in methodology that occurred in the APAIS survey beginning in 2013, and so we've had that in place since 2017, essentially the same methodology.

You know, there were -- I did look at one year, and there was not a major difference, if you were to look at estimate using that methodology versus not using that weighting scheme, but I wouldn't say I was able to do that -- I only did that for 2017, and I have not done that for subsequent years.

CHAIRMAN NANCE: Sean, please.

DR. POWERS: The other thing that you mentioned is the kind of attitude of the fishermen getting away from worrying about such short seasons, and have you seen that kind of settle down, when you talk to anglers and things like that, and are they more confident in the forty-ish-day season, and so they're not quite as paranoid, and aggressive, in the first days of the season, thinking it's going to be so short?

MR. ANSON: Yes, and I have not, you know, spoken to many anglers, but, you know, they are happier with a longer season, and the excitement that comes with a short season, and it's hard to define what a short season is for each angler, but, you know, the excitement that is generated with short seasons I think really motivates a lot of anglers to make those fishing trips, whereas a longer season, you know, places less emphasis on their list of things to do, if you will, because we are talking about recreational activities, or other alternatives, that anglers can engage in.

It does lessen the need to want to take those fishing trips, and it kind of forces them to make those trips if you have, you know, very short seasons, and so, to the extent that we can, you know, maximize the amount of pounds that we are able to provide to the anglers, that would effectively give us a longer season, all things being equal.

CHAIRMAN NANCE: Thank you. Dr. Cody.

DR. CODY: I just wanted to make a general comment in the presentation of MRIP intercept counts and distribution information. Those distributions should really be weighted, to be fully understood, and I think that, you know, it's one thing to present an unweighted version, but you have to keep in mind that we weight the samples, and those distributions can look very different from what were presented.

CHAIRMAN NANCE: Okay. Thank you. Any other -- Paul, please.

DR. MICKLE: Kevin, I have two questions. The first one is, and it may have been asked, but did you look at it in simple waves, temporal structure, within years, similar to the MRIP system, to try to look at maybe some of those spatial differences and give some more insight into what might be driving those, as well as some more effort insights?

MR. ANSON: Look at what specifically? I guess, I mean, we do generate estimates, in Snapper Check, that are at wave levels, and those are provided in the report, near the end, or in the appendix, but what specifically, as far as temporal scales, besides that?

DR. MICKLE: Sure, and so understanding like maybe what's driving the PSEs, and some of the PSEs, percent standard errors, are higher in some years, and there's a lot of variability within the PSEs, and I just wonder if all the waves -- All the variability in the season lengths may be playing to that, so to speak, and then I had another question.

MR. ANSON: I have not looked at it with that question in mind, but certainly, the shorter the season, you know, it tends to cause for higher PSEs, either within the annual -- At the annual level or in a wave, if the number of days that the season is open in a wave -- The less number of days you have, as I recall, the higher PSE you will have.

DR. MICKLE: I think this might be directed, indirectly, I guess to Tom, and so, Tom, from a council perspective, I'm reading the scope of work here for this agenda item, and it does ask the SSC to consider the following terms of reference of each state's proposal, and, more specifically, if a proposed revised calibration ratio is calculated in a method that is not dissimilar from that which is approved, and is consistent with BSIA from the August meeting, such as here, and so there was three different alternatives, and two of them I think are different from what was proposed in a prior year, in August.

With the framework identified at the council level, are we expected, as a body, to identify, specifically with this presentation, Alabama, one over another, as recommended from a methodological perspective, to the council?

DR. FRAZER: I think in the council discussions, right, there was latitude for the states to modify their calibrations, right, as long as they were found to be acceptable as you move forward, because the data was going to get potentially better, right, with

time, and so the goal is to get an improved calibration, and so I think the council, and anybody here can certainly chime-in, based on the advice of the SSC, right, has to latitude, again, to adjust those calibration ratios, moving forward, and so it's as simple as that.

DR. MICKLE: Thank you, Tom. That helps a lot, and hopefully that helps some folks here, in listening to these presentations, but, you know, we talk about yield streams and things with the SEDAR process, and we provide scientific and statistical justifications, this body does, on certain years that are used in the projections, from a stock assessment SEDAR perspective, and I'm assuming that would be very similar to the years that are suggested by these state surveys, one versus another, because some of these suggested calibration ratios are temporally selected, so to speak, and so it was briefly -- With the justifications, I would think we would want to go through the Alabama one with the three suggested calibration scenarios, of why they chose those, and the justifications behind them.

Kevin briefly did it, but I think one of the slides, and I can't remember which one it was, but there was the one using only 2019 and 2020, and I would ask question, and I need more justification on why those years were chosen, if we are expected to select one over another, or endorse, or bless, one over another.

CHAIRMAN NANCE: This presentation is a general outline. Then, once each of the states have presented, we will go back in detail and be able to do each of the states, their recommendations, and our recommendations for each.

DR. MICKLE: Even though we may have more questions about each one?

CHAIRMAN NANCE: Absolutely.

DR. MICKLE: Okay. Thank you.

CHAIRMAN NANCE: On that point?

DR. BARBIERI: Well, not necessarily, and it's just a different clarification.

CHAIRMAN NANCE: Okay. Well, I have some other guys in front of you. Mike.

DR. ALLEN: Thank you, Mr. Chair, and thank you, Kevin. I was looking at Slide 9, and, I mean, it seems to me, for calibration

to be successful, there needs to be a similar trend between the two surveys, and the CHTS doesn't seem to follow the same trend as the Snapper Check, and I'm just curious why that is, because that would cause a temporal -- A need for a temporal change in the calibration metric, but it's certainly not an average, and so I'm just wondering why the CHTS is showing this kind of dome-shaped harvest, landings, from 2014 to 2021, but the Snapper Check is not showing that trend at all.

MR. ANSON: Well, I think it kind of goes into what my belief is, is that the majority of the discrepancy is from the effort side of CHTS, and so the number of angler trips that are being estimated in CHTS is inflated, and Trevor is going to talk a little bit about some of the ways they looked at, you know, kind of interpolating the estimates from CHTS in Mississippi and comparing that to the number of licensed anglers and how many trips those licensed anglers would need to take.

We did something similar to that a couple of years ago, as to how many vessel trips, on the highest day, that we received landing reports from Snapper Check, and it just -- The infrastructure, as far as the number of ramps -- Yes, we do have folks that have docks behind their houses, and we have marinas, but the number of vessel trips that would need to have taken place, in order to meet the amount of harvest, just didn't seem right.

You know, we just believe that it's somewhere in the effort side of the computation that is being made in CHTS and that that is being impacted by things that are occurring with the dockside survey, which portions and weights -- The trips are based on residency, which are applied to the raw trips that are being collected in either the telephone survey, under CHTS, or the mail survey, under FES.

You know, we have a longer -- We have an increasing number of season days as we go forward in time from 2014, essentially, and yet we saw an increase in harvest through 2017 with CHTS, but, yet, we see a decreasing harvest, with an increasing number of days, and some of that plays into catch rates, and some of that plays into mean size of fish, but, you know, I think there's just some other things going on that can account for that change, and I think it's related to the effort.

CHAIRMAN NANCE: Thank you. Will, please.

DR. PATTERSON: Thank you, Mr. Chair. Could we go to Slide Number 7? This kind of shows what Mike was talking about, but without the information about what the ACL was, and so, in the more recent

years, the Snapper Check, the ratio of Snapper Check to CHTS, has gone up, and so I think, in the most recent year, it's almost 0.7, but it's not because the Snapper Check landings have increased right, because they are capped. As we see, they're mostly hitting the ACL, and then the season was closed until 2021, and then Kevin said the 2022 landings are about half -- The estimates are about half of what the ACL is there, at least the preliminary estimates.

Snapper Check is kind of sneaking up on CHTS, but it's because CHTS is going down, and we have this, you know, proposition by Kevin that it's because there is a potential bias in 2017 that causes that peak, and there was a strong year class in the mid-2010s that came into the fishery, and, you know, without having other information, it's hard to tease apart what could be driving that peak, and it possibly could just be some small, young fish that recruited to the fishery and increased the landings there.

I do think that the data that Sean has could be brought to bear here to look at -- The earlier estimates, and, Sean, I don't know what the more recent ones are from your survey, where that exploitation rates, here off of Alabama, were on the order of 0.4 or 0.5 or 0.6, which is much higher than the related F at MSY would be for -- You know, that is estimated for red snapper, which is around 0.08.

Obviously, exploitation rates and instantaneous rates aren't directly comparable, but you get the idea here that the exploitation rates are estimated to be much higher than the FMSY, and so I'm just curious, you know, how much of this is stock dynamics versus the sampling issues that Kevin raises, and there has been recent public testimony at council meetings, with folks in this region saying that -- Especially for-hire sector fishers that are saying the stock in that region is not particularly healthy. You know, that's their perception, and I guess the current regional three-region assessment model might pick up on some those dynamics, if it's present in the data, but, anyway, I'm just kind of curious if we could try to tease this apart a little bit.

CHAIRMAN NANCE: Sean, go ahead and --

DR. POWERS: So I'm not sure about the -- I don't recall the 0.5, 0.6, and 0.7. I mean, that might be just in that very shallow area, reef area, in the nearshore. The high-dollar tag stuff that we did, that I would feel much comfortable taking exploitation, and I think -- It's still high, but it's more 0.3, is what Catalano, Matt Catalano, and we have published.

There is no doubt that -- I'm not sure if it's a strong year class, or there was some built-up biomass after Deepwater Horizon closures and things like that, and, I mean, we do see the trend that there are more fish, red snapper, off of Alabama, but they are smaller.

The average size continues to decrease, and so that's the trend that we're seeing, and that trend is most pronounced in the shallower reefs, the less than 120-foot reefs, but the exploitation rate I would feel more comfortable with is the one that we derived from the three rounds of high-dollar tagging, which is more like 0.3, but it's important that exploitation rate, like you said, isn't necessarily the same as the instantaneous Fs, because that exploitation is largely based just on artificial reefs in those systems, but I guess I'm trying to figure out, if the quota limits harvest, how could we learn anything about what you were getting at about the condition of the stock if the harvest is more or less flat and held there.

CHAIRMAN NANCE: Kevin, please.

MR. ANSON: Thank you. To Dr. Patterson's point, yes, we have heard those comments from fishermen that there is this idea of localized depletion, whereby those reefs that are closer to shore do not hold the same numbers, or size, of fish as they did three or four or five years ago, and we had included, in the dockside survey, in 2016, 2017, and 2018, the question about -- For those anglers that had red snapper, what depth of water they harvested the majority of the red snapper that comprised their landing.

I provided that information in the report, but, as I recall, when we added federally-permitted charter boats, and their catches, because we did conduct that for federal charter boats during that time period, when we added their harvest, and where they said they were catching the fish, 90 percent of the fish were being caught in depths of water that were 120 feet or shallower, and 95 percent, or greater, of the, quote, unquote, red snapper habitat, you know, the hardbottom, hard structure, that red snapper prefer -- 90 percent of those harvests that we intercepted at the dock were being harvested off of artificial reefs, essentially, because that's all we have within 120 feet -- In the 120-feet of water depth zone off of Alabama is artificial structure.

CHAIRMAN NANCE: Thank you. Luiz.

DR. BARBIERI: Actually, Tom was ahead of me.

CHAIRMAN NANCE: Okay. Tom.

DR. FRAZER: I just want to circle back on a couple of ideas and questions that have come up from Paul and Mike and Will, and so I want to get -- I don't want to ever tell this body how to do their business, right, but what I'm thinking about is, you know, really, the charge is to determine whether or not the calibrations are appropriate, right, and so there's lots of reasons to explain why the data generated resulted in, you know, the findings that are reported, but, at the end of the day, you know, are the calibrations, or the data that are collected to inform those calibrations, reflective of the current survey instrument, which is CHTS, and so, to get to Mike's point, when I look at this figure, and Will pointed this out, you know, it's fairly dome-shaped, but they're both dome-shaped on those last four years.

You know, it's a bit of a scaling issue, and you can do a back-of-the-envelope calculation and then plot it in a relational manner, you know, in a scatter plot or something, but it's about an 80 percent, you know R^2, or something like that, but the real question would be, you know, is there bias over that time period, you know, or is it an accurate predictor of what's going on, and I'm not going to make that decision, but the -- You know, if you start to go to two years, right, two points -- You can draw a line between two points with an R^2 of one all the time, right, and so you have to think about that, too.

I just didn't want people to get so far away from the initial, or the immediate, charge. You know, are the calibrations representative for the purpose, right, and there's a lot of work to be done in the next couple of years, until we actually get an assessment that's carried out in FES units and may include these state data collection programs and survey programs. This is all that we've got, and we're not going to solve that problem in the short-term, and so I'm trying to simplify it for folks, moving forward.

CHAIRMAN NANCE: Thank you, Tom. I've got three more. I'm going to do Luiz, Trevor, and Roy, and then we're going to break for lunch, and we can continue this conversation after, obviously.

DR. BARBIERI: Thank you, Mr. Chairman. Kevin, my question is simpler. In the document, Table A-4, right -- Kevin can respond, or answer this, without seeing the table, and so two questions, and one is the estimates for Snapper Check are inclusive of both private anglers as well as for-hire, right, the state charter?

MR. ANSON: If that's your question, yes, the total aggregated Snapper Check harvests that are presented, either in the presentation or there in the report, except in that table, they

are -- When they're aggregated, they include private vessels and charter vessels that have a state charter license, but not a federal permit, because, you know, the federally-permitted vessels still have to purchase a state charter license as well.

DR. BARBIERI: Right. Thank you. Then the other one is do you have an update, or updated table, you know, that gives us the private sector component, because it looks like, for the years 2018 through 2021, they're based just on the charter sector, and I don't see the estimates and the PSEs there for the private component.

MR. ANSON: In Table A-4 that's up on the screen right now?

DR. BARBIERI: Exactly, yes.

MR. ANSON: So that's the state designation, or state season. When it says "season" there, for the private vessels, is when the respective waters were open, or when there was harvest that occurred, and so, when the federal season is open, our state waters are open as well, and so we just -- All of the trips are considered federal.

When we have an exclusive state-water season only, and the federal waters were not also open, then we generate estimates that are within the state season, and there's a little bit less fishing effort that goes on there, generally, because there's just less, you know, fish that are being caught, and so that's how we segregate them, and that's why there is not any harvest that's listed in 2018, 2019, 2020, or 2021, because we've been operating under the EFP, or regional management, and our state season waters are opened and closed at the same time as the federal waters were opened and closed for Alabama anglers. They were still open to fishing, but, for Alabama anglers, they were effectively closed.

DR. BARBIERI: Okay. Got you. I understand it now. Thank you.

CHAIRMAN NANCE: Thank you. Trevor, please.

MR. MONCRIEF: I think Tom hit it right on the head with that explanation of are they appropriate or not, and, in colloquial terms, what we're realistically looking at is a band-aid, until the next upcoming assessment, to operate the fishery under, and looking at what can be applied.

Now, I was going to go back, just quickly, to that 2017 estimate, since we talked about it for a little while, and what happened in the fishery during that time period, and so a thirty-nine-day

federal extension, three-day weekends, and, essentially, it turned this fishery into a three-day derby fishery for thirteen straight weekends, which means that you had above-average participation, across-the-board, by anglers, every weekend when the weather was good.

What that does, in my mind, the most logical explanation for why that estimate is higher, is that you had the above-average, what was expected, and you had a lot of individuals that were out there fishing for red snapper, which then attributed more effort to the offshore area, because the amount of anglers that you were seeing were high and above what you see in any other year, and so the designation of the offshore area, that ratio being higher, attributed more of the CHTS effort that was derived to that effort, which was then applied to the harvest.

I mean, the clear and easy look at it is to see whether your angler success dropped off, you know, your harvest per angler, if the weights shifted or anything else like that, and, if those two things didn't happen, it's likely how effort was attributed to that area alone, and so that would be my explanation for why 2017 is different.

CHAIRMAN NANCE: Andy, please, to that point.

MR. STRELCHECK: I'm not going to dispute what Trevor said, but I guess a word of caution that I think there's a lot of management nuances, and potential bias, here with the entire time series, and so, pre-2017, we were running into a situation where the federal season was shrinking, because the state seasons were expanding, right, and so that's a very different environment than what we're operating under currently, right, and so you have to think about that, in terms of using the older data versus the newer data and having the federal consistency and delegation of authority to the states, and trying to match those state and federal seasons, where we now have that match, with the exception of Texas, and so just a word of caution that there's more to this story than just picking out one or two years or data.

CHAIRMAN NANCE: Thank you. Trevor.

MR. MONCRIEF: Just to that point, I mean, I agree, and that's kind of the basis of why we chose our first years, and what we'll propose here soon, because that is -- I mean, it was a significant change in the fishery. 2016, we had non-compliant state seasons and a shortened federal season, and angler behavior is completely different than what happened in 2017, which was a large-scale derby fishery across weekends. We then switched into the EFPs, where

you saw stabilization of the fishery, and so management bias -- We're going to talk about that, and, I mean, the most clear and obvious times, when the fishery actually evened-out, was after 2018.

CHAIRMAN NANCE: Thank you, Trevor. Roy.

DR. CRABTREE: Kevin, I am mostly trying to -- So your preferred is to use 2020 and 2021 and not use 2018 and 2019, and, as Tom mentioned, that's a little concerning, because it's only two years, but I'm trying to focus more on what's the rationale for not using 2018 and 2019, and I think I heard you say that there were changes made to Snapper Check after 2018 and 2019 that make it inappropriate to use it, and did I hear that right, or -- Because I am looking for a clearer statement of a rationale for not using 2018 and 2019 as part of the time series.

MR. ANSON: Thanks for the question, Dr. Crabtree. It's good to hear your voice. I don't recall making that statement regarding 2018 and 2019, as far as any changes in Snapper Check. There have not been any substantive changes to the survey design or anything in those years, or subsequent.

DR. CRABTREE: Okay.

MR. ANSON: But, as far as answering the question to provide some more rationale, it's just that, you know, I think what Trevor alluded to, is that kind of aligning with kind of the fishery as it is now, to the extent that we can, and the fishery is a little bit more, or a little less, in flux, and in flux not only has to deal with directly, you know, number of days, which days, whether it's state waters or, you know, state season days or federal season days, but just the longevity of the season and how anglers respond to that. Thank you.

DR. CRABTREE: Okay. Then the other thing I noticed, when I look at this calibration, versus what we saw with Florida, is, with Florida, it was a lot about the calibration between SRFS and FES, and yet, here with Alabama, it's -- All we have is Snapper Check and the CHTS survey, and I wonder if there are any reasons why it would make more sense to calibrate with FES, rather than the CHTS, because you can always convert back and forth between FES, but it worries me, a little bit, that we're calibrating Snapper Check with essentially a calibration of CHTS, because CHTS isn't even operating in these recent years, and it's FES and Snapper Check that have actually run together, and I don't know if that bothers others, but it's just a difference that I see.

CHAIRMAN NANCE: Thank you. Kevin, go ahead and address that, please.

MR. ANSON: To that point, and I think Andy mentioned it earlier, you know, that, basically, the ACL was derived using CHTS, and, yes, we have this issue of, you know, further and further in time we're using a model, and that creates its problems, but, you know, at least for the current, you know, converting to FES and then going back FES to CHTS, I think it adds a little bit of complexity.

I think it doesn't get us away from, I think, the issue, from at least our perspective here in Alabama, relative to the reliability of the survey to provide reasonable estimates of harvest when you juxtapose that against the assessment, and you juxtapose that against the Great Red Snapper Count. I mean, FES, right now, and for the last four years, at least, from the website, NOAA's website, when you look at the landings in FES for Alabama, and this is just private, private rec, and I can't tease out state charter vessel harvest from there, but you're looking at a ratio of 2.46, for the four-year time period, higher in CHTS, or FES, harvests.

You know, you put those pounds in there, and then you relate that again to either the current assessment, which I know is using CHTS, and so, theoretically, it should go up, but, when you look at the Great Red Snapper Count, the amount of fish harvest that translates, relative to the amount of fish that were estimated to have been off of Alabama, at least in 2018, it just doesn't match up with exploitation rates, instantaneous F, and the general understanding about the red snapper biology.

DR. CRABTREE: Right, and I know those concerns are out there, but I'm just trying to look at having some consistency in how we're coming at this, and if we're, in some cases, calibrating between the state survey and FES and then, in others, we're calibrating between the state survey and CHTS, and it seems to me -- I mean, I know this whole state management route has taken us towards tailoring things for different states, but it seems, to me, that some degree of consistency in how we approach problems might be desirable, but I'm not sure what to make of that.

DR. BARBIERI: Just a quick interjection here, Jim, and I'm sorry, but to clarify, because I don't think that Dr. Crabtree -- The request, the letter, from the council, right, and from the Regional Administrator, was requesting a calibration from the state survey to CHTS, right, and the council -- So that was the request, because they need that for CHTS.

CHAIRMAN NANCE: Okay. We're going to go ahead and break and come back at ten after one. Kevin, thank you so much for that presentation, and we may have some more questions after lunch, but thank you for being on.

MR. ANSON: Thank you, and I will be listening after lunch. Thank you.

CHAIRMAN NANCE: Thank you.

(Whereupon, the meeting recessed for lunch on January 11, 2023.)

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January 11, 2023

WEDNESDAY 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 Wednesday afternoon, January 11, 2023, and was called to order by Chairman Jim Nance.

CHAIRMAN NANCE: We will go ahead and start. I appreciate everyone's attendance for our presentations. Do we have any additional questions from the SSC for the Alabama presentation? Seeing none, we'll go ahead then and bring up the Mississippi presentation, and, Trevor, I guess you're up for that, and we appreciate you being here and being able to give that presentation.

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MR. MONCRIEF: I'm always happy to be here. I know it's a tough topic, but we're trying to do our best as a state, and what I will do to start -- This is Mississippi's proposed calibration, and I will go over the program, real quick, just as a quick review, for those who haven't heard about it.

Tails 'n Scales is a mandatory reporting program. We operate similar to how Kevin described his, where we have site selection based on probability of proportional sample size, and we gather surveys at those areas. The amount of fish and the non-compliance is used to develop a correction factor for non-compliance, to be able to get the overall harvest estimate.

The difference between the two programs is that we have an assigned, unique trip identifier, and so it's a hail-in and hail-out system, and that trip ID is carried with the angler from the start of the trip all the way through the end of the trip. It expires after twenty-four hours. After twenty-four hours, their account is locked, and they are unable to create a trip until they report on their trip that was made. They are sent email and text reminders of that expiration, and they are typically cleared out within a forty-eight-hour period.

I guess I will say this, and so the true merit, to me, of Tails 'n Scales isn't its statistical rigor, or its complexity, and it's its ability to be enforced, and that's the reason that it was built the way it was. The unique trip ID starts out with eight digits, and it's the date, the date that the trip was made.

Our Marine Patrol, our enforcement folks, were essentially pushed by CMR, mandated by the CMR, to stop as many snapper anglers during the season as they possibly could. The goal they set for them was 5 percent. Now, they have exceeded those expectations every year, by stopping with an internal goal of over 10 percent, and, with that, we're able to use those to help corroborate what we're seeing in our intercepts. Now, in our intercepts, we're usually around 95 percent compliance, and it's between 94 and 96. Marine Patrol typically sees between 92 and 95. They fluctuate and hover right there with one another.

Now, I'm going to go ahead and answer a couple of questions that were provided by Sean that have come out so far, and one of those is changes to the program. Our program, the survey itself, has operated consistently from 2018 through 2021 for the proposed timeline, 2018 to 2020 for our calibration, and the changes that have been made haven't been necessarily on the survey side, but it's been on the ease of use from the angler side, with their interaction with the app and how they're reminded about their trips and how they're sent their trip number and everything else, and the ability for law enforcement to do their job in the best possible manner.

That includes, you know, access to law enforcement for trips that are out, because, when we first started, it was meant to also be kind of a hail-out for a safety thing, people closing out trips and knowing who was out and doing everything, and it would also allow them to be able to allocate the resources as they saw fit, to a degree, right, and we didn't give them exactly where everything was being launched, but they knew the amount of trips that were out that day and what was going on.

The other changes, right, that still exist outside the survey, but it helped out with enforcement, was promulgation of regulations that allowed for us to be able to cite individuals for not reporting accurately, and so, when the regulations first came out, everyone was mandated to report, if they were harvesting red snapper, and there wasn't any -- There was no information in there regarding the true accuracy of those reports, right, and what we've started to see, right, is a very small percentage, but we have seen folks abandoning trips that were observed with positive harvest from the Marine Patrol.

We have seen folks that have positive harvest, from Marine Patrol, that are reporting zeroes, and that is 1 to 2 percent, right, and it's a very small number, but our goal is to try to make sure that we can cover all of that stuff, and so that's within the research topics that we have coming up in the future to try to cover.

You know, we're to the point now where we're trying to review our estimation procedures, and we're trying to come up with things that best cover all the scenarios that we've seen thus far, and we want to include as much data as we possibly can into that, especially the Marine Patrol group that, like I said, stops over 10 percent of the entire fleet every year, and so a substantial number, and so that is things that we're working toward on the survey.

Consultant recommendations, and so that was brought up for certification and everything else like that, and one of the recommendations was how the landings site question was displayed, and we did that, and we divided by county, so it's easier for the anglers to select, and nothing real big on the survey there, and this is a separate presentation.

Like Luiz said, I kind of didn't have the foresight to include this information into the presentation, and I'm trying to go over it now, and I will tell you one of the biggest ones that we've got is private docks, and we had that conversation yesterday, the amount of private docks.

Now, we still get reports from private docks, and they're still enforced to nearly the same degree as the public-dock participants, because they are almost equally as likely to be stopped by Marine Patrol. We've tried multiple different ways to get at this, and we've done voluntary participation programs, private dock intercept programs with geofencing stuff, and we've called those individuals and got them as a part of a group on the app, and we did development work to make sure that we could try to do this, and, at the end of the day, you had to press a button to

participate.

That button is not pressed, when it comes down to it, and so we're trying our best to do the private dock stuff, and we see that as a point that we could really improve on, and we would like to.

We stratified the site selection process for uncertainty, all the way down to low-pressure sites, to ensure that we had selection of low-pressure sites, to make sure that we were covering everything adequately, and then other ones to explore alternative estimation methods, which we're currently doing with a statistical consultant, and so reviewing current and trying to produce a model-based estimation to better -- You know, to better cover all the scenarios that I just talked to you about with the Marine Patrol and to also get a better look at what a true uncertainty looks like, right, because there's a lot of facets to the program, but, at the end of the day, when you're looking at non-compliance, your PSE doesn't necessarily cover everything you know is going on in the background that you can't really have in an intercept validation. The last thing --

CHAIRMAN NANCE: Trevor, can I ask question?

MR. MONCRIEF: Yes.

CHAIRMAN NANCE: You're using the term "survey", but, by law, it's required that a trip has to report?

MR. MONCRIEF: Yes.

CHAIRMAN NANCE: So would that be more like a census, in a way?

MR. MONCRIEF: We've always gone back and forth, and it's just a term. To me, at this point, with 95 percent compliance and everything else, you know, I always kind of thought, in the back of my mind, if this were a trip ticket program for a commercial fishery in our state, we would treat it as it is, to a degree, but it's not, and it's for a different sector.

CHAIRMAN NANCE: Okay. I appreciate that.

MR. MONCRIEF: The last thing I will touch on with general improvements, that didn't necessarily affect the survey output, but did positively affect the ability of the survey to streamline and be conducted in the best possible manner is we had a call center for a while that was external, and that was moved to an internal call center of a round-robin cellphone that goes across the staff, and Paul was around in the beginning, right, and we

used to get calls at 4:00 a.m., when we started this program, answering calls from anglers and everything else.

We put it off to a call center, so that everyone would be able to be able to log a trip, if they didn't have internet access, or they didn't have a smartphone or anything else like, and we've taken that and put it internal, and so, when folks call at 3:00 a.m., or 4:00 a.m., they're getting one of our staff members, and they're getting a friendly voice, and, when they get made, we say, listen, bud, I was sleeping when you called me, and I'm trying to do the best that I can to get you on the water, and so we have seen a marked improvement in compliance and folks really switching over to the app and computer, based off of that.

With that, I will go into our proposed calibration, and so a little bit of background. The previous calibration, from when it was discussed in 2020, used 2018 and 2019, and that was for the reasons that essentially were discussed earlier. 2016 was a non-compliant state season and a shortened federal season. 2017 was a thirty-nine-day federal extension by the Secretary of Commerce, and those two were completely different, when it comes to management.

2018 and 2019 were the years of the EFP, where we actually had consistency in the fishery, in terms of season length and the distribution of fishing days amongst waves. Now, we also had hesitance with the presence of the Wave 1 estimates that occurred in 2016 and 2017. Now, we're not proposing using Wave 1 in the current calibration, but I will say that what occurred is that Louisiana opened in January of those two years.

We had anglers who went out and harvested fish and contributed to Wave 1 estimates that were large, and we'll go over those later on in the presentation, and so we used 2018 and 2019, and those were our justifications for using those years.

Now, the updated current proposal is designed based on observations and patterns of MRIP estimates and our concern with their overall accuracy, and so we limit the calibration to high-use waves, Wave 3 and 4, and don't use Wave 5, for reasons we'll go over, and we use estimates from 2018 to 2020, and I will provide that justification in the next two slides.

We won't go over this in detail, and I will just get you familiar with this figure and let you look at it for a second, and that's the wave is on the X, and the harvest estimate, for both components, is on the Y, and the data labels on top of the bars are the days that the recreational red snapper season was open, and so what you will see is there is consistency in the drop-offs

of harvest between Waves 3, 4, and 5 with Tails 'n Scales, and you will see these fluctuations in Wave 5 for MRIP, and you will see large shifts in magnitude of Wave 3, and we'll talk about those here in the next couple of slides.

Our justification of the proposal for limiting our comparison to Waves 3 and 4, and so waves in which the red snapper fishery does not primarily occur are subject to large disparities in estimates, and what this is likely associated with is a smaller number of completed surveys for the MRIP survey, right, and so our state is three coastal counties. We have 3.55 percent of the overall quota right now, and it's 150,000 pounds. We have the least amount of traffic of any Gulf state.

The design of MRIP requires a large amount of surveys to be conducted, and it requires that because there are so many ratios and everything else that plays into how those harvest estimates are produced, and, if you start dropping off the number of surveys, and you don't have it in the prime time, all of a sudden, one survey day in Wave 5, on a weekend, represents the entire wave, when it comes down to it, and that proportion is not scaled down by surveys that occur later on in the wave.

Now, for 2018 through 2020, excluding 2021, it is apparent that, despite occurring during the primetime of the season, Wave 3 shows volatility that, to us, is unexplainable. I will do my best to present what my hypotheses are, or what our hypotheses are, of why that occurs, and what's going on, but it does not match the patterns that we observe in the fishery, and it does not match what we observe on the water with surveys, and so, as a compromise, and I will highlight that specifically, a compromise, and that's what we are proposing here, we have chosen to use three of the four available years, to lessen the impact of the large magnitude Wave 3 estimates that occur in two of those four years, in 2019 and 2021.

That's an overall of what we've proposed, and why I said it's a compromise, and now what I'm going to do is present basically the thought process that we went through, over the last couple of years, to come to the realization that this compromise is viable and appropriate for the State of Mississippi.

CHAIRMAN NANCE: Trevor, can I ask a question?

MR. MONCRIEF: Go ahead.

CHAIRMAN NANCE: What is the current calibration rate? What is used for the current calibration?

MR. MONCRIEF: Right now, it’s 0.6, and so a 60 percent reduction, down to 60,000 pounds.

CHAIRMAN NANCE: I mean what years are used?

MR. MONCRIEF: 2018 and 2019, all waves.

CHAIRMAN NANCE: 2018 and 2019, all waves?

MR. MONCRIEF: Yes.

CHAIRMAN NANCE: Okay. Thank you.

MR. MONCRIEF: Yes, and it’s important to note that, when we proposed that, we were at the beginning of understanding truly what was going on in our state and where we were at, and so this represents the work that’s been done by our staff, and the realizations we've come to, and our discussions with Richard and his group.

The first thing is what we’ve all kind of talked about, right, and we’ve all talked about the magnitude of effort estimates and how large they are, and so, when we first saw them, obviously, we thought they represented a drastic overestimation of angler effort for our state, and so the first thing we did was try to groundtruth it with things that we knew were somewhat solid, and we started out with fishing licenses and 80,000 licensed anglers in Mississippi. In order to reach the overall MRIP trip estimate, anglers in Mississippi would each have to take fifty-seven fishing trips per year, and that’s five trips per month. That’s more than once a weekend. Even your avid anglers struggle with doing that.

Ramp capacity, right, and this is from the MRIP site register, and there are thirty-four public launch sites with 882 boat trailer parking spots. The total number of private boat trips, if every ramp was at full capacity, 365 days of the year, and every parking spot was taken up, is 1.02 million angler trips, and that’s assuming 1.37 anglers per vessel, which is what we’ve observed in the past.

Even if we account for 30 percent of those trips coming from private docks, that estimate is still 1.32 million, and under the MRIP private boat estimate of 1.56 million, and so we would have to be operating at above full capacity for 365 days of the year, even with 30 percent of our trips coming from private docks.

Now, we understood that the magnitude was off, right, and we don’t

agree with the estimates for magnitude, but then we wanted to see the timing of that effort, the patterning of the effort, to see if there was something going on behind the scenes that might explain exactly what was going on, and so we mapped it out, right, and that's what that figure is on the top-right.

Here on the top-right, you have wave on the X, and you have angler trips on the Y, and it's faceted by year, and, if you look at 2010 to 2015, you see similar patterning, right, and, for the most part, the peak occurs in the middle of the year, and it plateaus on the edges, which, you know, isn't necessarily representative to us, and, in 2015 to 2017, we start seeing these spikes beginning to occur in Wave 6 and Wave 1, waves which should have the lowest two effort estimates for the state. It's wintertime. Then, in 2018 to 2021, with full implementation of FES, we see a differing pattern each year.

Now, for those familiar with, you know, how a fishery is prosecuted, the recreational fishery and everything else, they can change what they target, and they can switch around sometimes, but, for the most part, the pattern of your effort should match what's observed on that bottom figure, which is the weighted APAIS intercept distribution from 2015 to 2019, and this is provided by Richard's group, because we had a discussion about this item, and I was using the raw intercepts, and they provided the weighted intercepts, and you can see that Wave 6 and Wave 1 are the lowest.

You can see stark drop-offs in Waves 2 and 5 and the peak of the effort should be in Waves 3 and 4, and that's just not the pattern that we see coming out of FES, and so APAIS is showing one to us, one pattern of distribution that we think is accurate, while FES is showing a different pattern.

What we're also able to do, now that we have Tails 'n Scales, is now we know the magnitude of the effort for us seems to be off, and the patterning of that effort is non-existent, and it doesn't match what we see on the ground, but, with the introduction of Tails 'n Scales, we were actually able to start to conduct basic comparisons of harvest estimates, and so both surveys function differently, but the comparisons can still inform why and where the differences occur, and I will take a moment to stop here.

It may seem like I am disparaging MRIP, and I promise you that's not my goal here. MRIP's design, and its complexity, and everything else cannot be matched with what's being done. It's a survey that is conducted across the entire United States, and it's got a portal for us to be able to look at data, and its design has been reviewed multiple times, and reviewed multiple times.

The issue is that what works for one state might not work for one that has a low population like Mississippi. Now, MRIP is also a survey, right, and it takes a small amount of information and tries to extrapolate with the information that it has, and it's gathered from dockside. Ours is a mandatory reporting program that operates with 95 percent compliance and is heavily enforced. I mean, obviously, those two surveys are just completely different from one another.

You would expect them to be different, all right, because even surveys that have similar designs have different outputs, but we wanted to compare them nonetheless, right, and so what we noticed, and what stood out to us, is that a low sample size, number of surveys, large disparities occur when comparing the harvest estimates. If you look at that figure on the right, the Tails 'n Scales harvest estimate is your X, and the MRIP harvest estimate is on the Y.

As soon as you see that harvest estimate for Tails 'n Scales start going below 25,000 pounds, you see this large disparity in harvest estimates that begin to occur, and so these occurrences are what drives Mississippi's concern about calibration to a common currency, all right, and a specific example is harvest estimates from waves in which the season was open for five days, five days, and they're just as high as when the season was open for thirty-five days during a prime wave.

The other example is that Wave 1 harvest estimates of 162,000 pounds and 414,000 pounds were recorded when Mississippi -- When the Mississippi state season was closed and only two boats were intercepted that were fishing in Louisiana waters and transiting back.

Now, what happened there, if you're wondering, is that, when you have such low traffic, and you aren't getting a lot of intercepts throughout a wave, two boats in January mean a lot, because that's what changes the ratio of folks fishing out beyond three miles and attributes all that effort to them, and so that effort, plus their catch rate, because there's not a lot of zeroes coming out of there, because you're not getting a lot of effort, that's what exploded that estimate of 414,000 pounds, and that's also higher than what Louisiana observed when they were open during that time period.

All right, and so magnitude of effort, pattern of effort, and now we know there's something going on with low sample sizes. When we have low harvest, there's a lot of volatility, and so we wanted to

examine that just a little bit more, right, and we wanted to look into this low-sample-size issue and really figure out what was going on, and, in order to do that, we had to make a critical assumption, one that I think is fair, and one that we've asked about, and it seems like it's a fair one, that the APAIS survey, the dockside survey, is representative of the overall fisheries trends that are observed in the fishery.

That means there should be a distinct positive correlation between the number of surveys of a given species and its corresponding harvest estimate. I am not saying that -- We aren't saying that one survey should be X amount, or that there should be just some formula calculation, but there should be some relationship that's observed.

Now, when we do that, and we compare, on the figure on the right, on the top, the number of MRIP surveys, and the corresponding harvest estimate, for Mississippi -- We see there is not a very large R^2 value, and we see that volatility on the small sample size, N.

Now, we did the same thing, and it's the same X, with the number of MRIP surveys on that bottom figure, and what we did was plot the Tails 'n Scales harvest estimates against them, and what we saw is that the Tails 'n Scales harvest estimates and the surveys conducted by APAIS, the amount of surveys, seem to have a distinct positive correlation, which, to us, helps hold up the assumption that the APAIS design is representative of the overall fishery.

We took it a little bit further, and these are the slides at the end of the presentation that I will get to if you all want me to do it, all right, and so what we decided to do was break down survey data, from all states, into specific species observations and compare them to the wave-specific harvest estimate, or harvest rate, that was derived from MRIP and examine that observed relationship. We did it for a multitude of species, including federally-managed species and state-managed species and some coastal migratory pelagics.

If that assumption is correct, you know, those species with large sample sizes should show a discernable positive relationship, and small sample sizes, in theory, should lead to lower estimates, right, and, if you're only seeing one of a species, then that harvest estimate shouldn't be large. It shouldn't be larger than what you observe in other time series.

I mean, I pick on Florida here in the bottom-right part of this figure, but it needs to be shown, all right, and this is Florida

red snapper, the number of intercepts and the corresponding harvest estimate, and you see that distinct positive trend that occurs for the number of surveys compared to that harvest estimate, and so that's the ideal distribution, right, some positive correlation.

The next slide will go through calibration issues specifically, and then, if you all want to go to that part of the presentation, I will run through that, just real quick, because I think it has some applications for our discussion.

Our current identified concerns are the low sample size waves, because they're subject to large disparities to estimates likely attributed to the amount of effort that gets attributed to them by those ratios of anglers fished in certain areas.

Those occur in Wave 5, and that's the reason why we threw them out. If you look at 2019, that's the most blatant case, right, and the season was open for five days, five days, and the harvest estimate for Tails 'n Scales was below 20,000 pounds. The harvest estimate that came out from MRIP-FES was almost 400,000 pounds, higher than it was in June and July, and almost comparable to what it was in Wave 3, in the most prime time of the fishery during opening weekend, and so that's our large concern with Wave 5.

Wave 3, the shifting magnitudes, we've had these discussions with OST, with Richard's group, you know, and the culprit that was pointed to was effort, and that is part of what's driving what's going on, and we have done a little bit more work, and we think we kind of know what's going on, and so I will point out the case example.

If you look at 2018, 2019, 2020, and 2021, in 2018, that harvest estimate is around 250,000 pounds, and it goes up to around 500,000 pounds in 2019, and it drops below 200,000 pounds in 2020 and goes back up to 600,000 pounds in 2021. Now, what I did, and what I had staff do, was look at the distribution of surveys across various sites, to see if there was some patterning associated with our largest traffic sites and what would happen, and what we observed is that the magnitude of that estimate seems to be correlated with the amount of surveys that are conducted at one of two sites, and those surveys seem to occur on opening weekend or the second weekend of the season, during the highest traffic times of the year.

What happens is you get such a large push of anglers on a single day, and the survey matches up with that day, and the surveyor goes out and gets seventy to eighty surveys, which I know, for Florida, is probably, you know a slow day, but they get seventy to

eighty surveys, and it makes up almost the entire proportion of the area fished ratio and what keeps it up, and, when we don't see that number of surveys, like in 2020, when we only had three surveys come out of West Beach, you see that ratio drop, and you see that estimate go down to below 200,000. In 2021, where you see 110 surveys come out of those sites, that estimate rocks right back up, because the ratio is 20 percent and the effort estimate is up, and so there seems to be multiple factors at play here.

This isn't the only stuff we focused on, and, if you go to the next slide, we've got our concerns over the estimates, and we've looked our best at survey distributions, counts, and we've looked into, you know, what might be driving them for our state, and it really is -- You know, it seems to be a small state issue for sure, but we've started to look into more, right, and that's why the next three or four years is so critical to the process of the transition and why we need to try to figure out the best way to proceed that we can, so we can keep this work going.

We've got a concern over the strata of specific distribution of effort, and I know that figure is pretty hard to read, and I can see that now, from the distance that you're at, and so we've got a concern on the allocation of effort across the different strata that are associated with the FES survey, mainly the coastal and non-coastal matched versus unmatched.

What you see, those orange bars, that represent 80 percent of the overall effort in a given strata, those are coastal, non-matched anglers, meaning they don't match to the license database, and they're in the coastal zone. Now, to not match to the license database, in a perfect world, what that means is that they're fishing illegally or they're below sixteen. That's the only thing in Mississippi, because we don't have senior exempt. That's still a license that's recorded.

Now, what most likely this is attributed to, and what we think it is, is it's probably a little bit on us, and we took it on the chin, right, and, in order to have FES and a license match function, and to be able to send it out to households and come back and get those strata right, your license database has to be perfect, and it has to be updated month-by-month, and that address that is listed on the license database probably has to be updated so that it's not, you know, 123 Snozberry Lane, where you lived five or six years ago, and you've changed residences twice.

We took that on, and we got an updated license frame from MDWFP and went through a whole new query protocol and everything else and started to provide that monthly. What that will come out to,

I'm not sure.

Our discussions with Richard's group, and OST, is that it's simply going to shift where that effort is attributed to and that it's essentially going to be the same effort estimate, but just in a different strata, which, you know, I don't necessarily see it, and I see it dropping the effort estimate a little bit, simply because of the size of the unmatched strata versus the license frame, but we had disagreements about that, and we'll see how it plays out, but the key is that this is something that we're trying to take a look at, and it's probably worthwhile for everyone to kind of think through what this means for every state and how this plays out in the long haul.

I talked about it earlier, but how site distribution may play a role in the ratio of effort across area, right, and the site selection for MRIP is statistically sound, and everything is done correctly, and it's done consistently. It doesn't mean that a small state still can't have issues when it comes to how one selection of a West Beach site, on Memorial Day weekend on a Saturday, might play into the overall ratio, ratios, of area fished and how that effort is contributed to a state.

Then, you know, also the similar issues to the low sample size waves. You know, all of a sudden, five or six surveys of red snapper, in Wave 5, mean a lot more than they do in any other wave, because there's not enough surveys on the backend of a wave to be able to balance it out, and, as has been hinted to before, there is focused research on the surveys that are up.

For ours, you know, we've expressed willingness to fund state-focused research for MRIP. It's not just red snapper that is a problem for us. Spotted seatrout, we had to pretty much toss out an entire year, because a Wave 6 estimate came through for the shore, and private boat, there were a million pounds, and it doubled the estimate from anything we've seen in the entire time series. Sheepshead, every year, and red drum, every other year, and it's every species that we have this kind of issue, and it's really just a couple of surveys that do it.

It's in our best interest to try to do the best we can to produce better estimates and get the survey to where we can use it regularly and with confidence.

We've got funds for research and private dock metrics, and that's something that we talk about all the time at this table, and, like I said, we've tried four or five different ways, and it's a hard thing to get ahold of. You're trying to get on people's private

land, and they don’t like folks asking them questions on their own property.

We’ve got funds for looking at reporting bias, and then also there’s been a proposal from the OST group for an abandoned trip proposal, to develop a group and take that option away, and just see how it plays out, and so we’re going to try to do our best to take that development and see if we can’t get that implemented as soon as possible, and then we’ll continue working with the statistical consultant on a new estimation method and try to do a sensitivity analysis of estimation methods, to see if there is a certain variable or something that we need to focus on that’s really going to drive our estimates that we can pour our resources into it and try to do the most important thing first.

I will be honest with you, and my office, my group, my leadership, if there is a better way to do things -- If there is a problem, if we get suggested to do something, we’ll change. We don’t have issues with changing, and we’re trying to make this program the best we possibly can, and we brought in a consultant to do it, and we provided our own funds to do it, and we’re just going to continue to try to improve.

The last thing I will touch on, for the red snapper conversation here, is, until the identified issues with MRIP in Mississippi are addressed, including more years won’t necessarily yield any different results, and I will use 2022 preliminary estimates to make this case.

Wave 3, if you look at the bottom of the table that’s here, represents the second-highest estimate in the entire series of the modern fishery, outside of the 1.2-million-pound estimate that was observed in 2012, Wave 4, and we had a large amount of surveys that came out of West Beach, again, and contributed to that. That is 22,800 pounds per day, 786,000 pounds.

The very next wave, Wave 4, was the lowest Wave 4 estimate, outside of zero, ever produced in the modern fishery. What happened there? The season was still open during that time period, and the site selection was not conducive to sites with a large amount of reef fish pressure, and, in reality, there was one day that would have basically given us surveys, and we did not get as many as expected, and that led to that low estimate, and so that’s how sensitive Mississippi’s estimates are to just the selection, right, and everything is done around the selection process. Everything is done, and everything is vetted, and it doesn’t mean we still -- It's not free of issues.

I mean, even with our survey, and the way we distribute stuff, we still have troubles getting surveys, and it just is what it is, and it's the fact of just having a small state with a low amount of traffic, and so that was it for the red snapper portion. If you all are willing to go to these next two slides at the end, and go ahead and let me go through those, I will do them. If you all want to ask questions, we can go through that, whatever you want to do.

CHAIRMAN NANCE: Right now, let's ask questions, and I think you've given us a lot of material to think about, and so, if you have direct questions on the material that's been presented for Mississippi --

MR. MONCRIEF: One more statement, before questions come up. You will notice that there's not any other scenarios in this presentation, and you will see, in the calibration letter, the response that our director sent over, there's not other scenarios, and this is the compromise that's been proposed by the agency, and this is the only scenario that I'm going to provide today, and that I can provide, and so what's in the docket for us is, if there's alternatives that the group thinks we should look at, those can be proposed, but they will have to be approved by the agency before they're presented.

CHAIRMAN NANCE: Thank you, Trevor. David.

DR. GRIFFITH: Thank you, Mr. Chair. You mentioned that the Marine Patrol people intercept about 10 percent of people on the water, and what do they actually do when they intercept those people, and then are people who leave from private docks just as liable to get intercepted as people from ramps and stuff like that?

MR. MONCRIEF: I will start with the first part. Mississippi instituted a pretty stiff penalty, when it came to those breaking the law, and it was citation with a large fine, and, in the time period we're talking about, 2018, they started confiscating fish. If you were found without Tails 'n Scales, you were cited and fined, and the fish were taken. That opened the eyes of a lot of people, and it really showed them what was going to happen.

If you go out, and you spend $500 on your fishing day, and you aren't going to make a trip, and you come back, and everything you paid for is gone. Those fish are gone, and so that penalty alone, taking the fish, really, I think, hit home with a lot of folks, and it really spread the word to be compliant with the program.

You asked about private dock likelihood, and so I made the

statement, at the beginning, that they are nearly just as likely, and I said that statement because, when I've asked Marine Patrol about the distribution of intercepts that they have, it's 75 percent on the water and 25 percent at the dock. 25 percent at the dock means that they're not going to get the private dock folks there, but they still get 75 percent of their intercepts on the water, which means the private dock guys are nearly just as likely to get stopped as anybody else.

We've gone through iterations of data transfer with them, to try to figure out the best way to, you know, not only get the necessary variables for matching, but to also get some ancillary data, to be able to start doing things like what I discussed with the proportion, or the positive interactions, or positive fish found, and the trip was abandoned and stuff like that, and one of those variables is leaving from a private or a public dock, and so we've gone through those iterations, and it's a constant process, right, and the Marine Patrol guys aren't held to what we do, and nor can we hold them to it.

We started out with a survey app that they provided data on, and it was a great platform, and they switched to an online ticketing software that, you know, now is in the hands of another developer, and so, you know, we're constantly trying to work through that.

CHAIRMAN NANCE: Sean, please.

DR. POWERS: Trevor, let me make sure that I understand the basics, and so, just Wave 3 and 4, for 2018, 2019, and 2020.

MR. MONCRIEF: Yes.

DR. POWERS: When you compare it, and I noticed that you expressed everything as FES and not CHTS, even though the direction is to -- So is your plan to change FES to CHTS?

MR. MONCRIEF: It's the same way that it was done for the 2018 and 2019 calibration in 2020, and it uses the stable ratio of 2.18 FES to CHTS, and so we convert Tails 'n Scales to FES and then down to CHTS, and that's using the table from last time.

DR. POWERS: Okay, and so, when you actually do the comparison, when you take the FES, or the CHTS, do you restrict both sides to just Wave 3 and 4?

MR. MONCRIEF: Yes.

DR. POWERS: Okay, and so you're not taking the annual FES and

doing it, but you're only doing Tails 'n Scales for 3 and 4 compared to -- Okay.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Trevor, a few questions. One I guess is a follow-up, because I was going to ask the same question that Sean did, in terms of the FES versus CHTS, and so are you guys converting FES to CHTS using --

MR. MONCRIEF: We are using the exact same table that was provided for the 2020 calibrations that used the stable 2.18 FES to CHTS ratio, and so we convert from the state survey to FES and then down to CHTS, in the exact same manner that was done previously.

DR. BARBIERI: I see. Then another one. For your Slide 10, where you have those -- You know, your years of data, and you have the FES and the TNS values there, in terms of landings, would you have the values of PSE associated with each one of those?

MR. MONCRIEF: We do, but it's kind of like how we responded within the letter, right, and, I mean, they're two functionally different surveys completely. We made the proposal, in 2020, to try to use PSE, and it was just stated to us that, since the application of those surveys are so starkly different, it doesn't really matter, and, to a degree --

I mean, if you look at Slide 12, you can see that, I mean, a majority of those are over the 50 percent PSE, and it's just the fact of the estimates that come out of our state, and nearly all of them are, and, in Tails 'n Scales, the PSE started at 10 and descended down since then, with the increases in compliance and everything else, but, like I said earlier, you know, I don't think that's necessarily representative as a whole, just because of the compliance rate, right, and there's things going on behind the scenes, with private docks and everything else, that probably add into that uncertainty that certainly we need to take account of, and that's what we're doing with the consultant now, and so, while we have the PSEs, we don't use them in any applicable way for the calibration, and we didn't in 2020.

DR. BARBIERI: Okay, and then one more. Help me understand here, Trevor, why would you use 2018 -- I am trying to look for statistical reasons, right, to use 2018, 2019, and 2020, but exclude 2021.

MR. MONCRIEF: The exclusion of 2021 was, number one, to have a consistent time series of consecutive years, 2018 through 2020,

and Number 2, just as important, is the magnitude of that Wave 3 estimate that comes out, and it continues to diverge away from what we're observing, and we're not seeing it on the water, and we're not seeing it in APAIS, and it just continues to climb and climb, and, at some point, we've got to figure out a way to compromise between what we're observing, and the compromise was let's use three of those four years. That's just simply to try to keep that Wave 3 estimate from having its effect.

CHAIRMAN NANCE: Tom, please.

DR. FRAZER: Trevor, I really appreciate you walking through that like that. I recognize, you know, the nature of the MRIP survey program, and I see why it fails, you know, as it relates to Mississippi and other locations, and, you know, I stepped back, and I tried to look at it a little more broadly then, I would say, but, if MRIP was intended to kind of capture a broader region, right, and your sampling, in Mississippi, is, you know, rigorous, and tailored to that specific location, could you relate the -- Could you create a relationship for Mississippi and the entire Gulf MRIP, an estimate, and this is where I'm going with this, right, and so we have some knowns, right?

It's not like -- I mean, Mississippi has 80,000 anglers, right, and they've got about 2 percent of the registered angler population in the Gulf, right, but, if you look at the estimates of the fish, they've got 2 to 3 percent of the fish in the Gulf, right, and so you're not looking to get a hundred-million fish, right, and what you're looking for is a calibration, right, that's going to result in an equitable allocation, right, or to those fish, and so, if you took your data and related it to the MRIP data as a whole for the region, would you have a relationship, right, that would allow you to get to that number, instead of trying to pick and choose waves? Do you know what I'm saying?

MR. MONCRIEF: I mean, it's something we can look into, and, if it's recommended, we'll look into it for sure, but I just wonder -- Just the sheer magnitude of the region-wide harvest, versus one, and, I mean, I understand that we're looking at patterns, but I just wonder how that would play out as a whole.

DR. FRAZER: I don't know, but there are two important parts there. One, you know, is is your very detailed effort in Mississippi reflective of the general pattern that you're seeing in the Gulf, right, and, if you have that, then you can move forward, right, I would think.

MR. MONCRIEF: Yes, and then, on top of that, you've got -- Yes,

it’s something we can look into, because you’ve got different season structures, and you’ve got different things that each one of the states have implemented, and there’s a lot of moving parts there, but it’s something we can look at.

CHAIRMAN NANCE: Will.

DR. PATTERSON: Thank you, Mr. Chair. Thanks, Trevor, for the presentation, and I’ve always been really impressed with Tails ‘n Scales, and, obviously, with the other states, it’s difficult to have a near-census of red snapper harvest and effort, and so what hurts you, as far as size goes with MRIP, helps you in your ability to track the fishery so closely, but, just because you’re more able to do it than other places, it doesn’t necessarily mean that it would be done.

It's a tremendous amount of effort, and I applaud your agency for undertaking it and, also, for walking us through this information, and I thought this was a really effective presentation, because, where there were issues with data, or estimates, you showed us where you thought the divergence was, and I found it really, in particularly, helpful when you showed the plausibility of what it would take to get to these estimates, given the number of parking spots at boat ramps and the capacity issue, and that it’s just not plausible to have these numbers, and so I thought that was very effective.

As far as the 2018 to 2021, it makes sense, to me, Mississippi’s logic here about, you know, 2019 and 2021 are the years, in the four years of the potential series, that have the greatest disparity between FES and Tails ‘n Scales estimates of red snapper landings. I mean, if I were Mississippi, I would probably argue to throw out 2019 and 2021 together, but I appreciate your rationale for trying to come up with a continuous time series from 2018 to 2020, and, anyway, I just wanted to commend you on your presentation.

MR. MONCRIEF: Thank you for that, and it’s not just me. Staff have been working on this, the entire group, all the way down to our lowest-level technicians to everybody that answers the phone, and I will say this, right, and I said it was a compromise, and the agency has -- They made the decision of where they want to be and what they want to do, and they’ve chosen these years.

I will link back to what Will just said, right, and the option could have been for us to throw out 2019 or 2020, and it could have been to choose one year, and it could have been any other option, right, and there were three options, or four options, that

would give us more pounds than what we've currently asked for, and we recognize the need to calibrate, and we understand it, and that's why we chose this option that's a compromise that's right in the middle of what we've observed.

We'll take the hit, and we want to continue doing the research, and we want to continue doing this work, because we know how much benefit it will provide, and that's why we've presented this compromise.

CHAIRMAN NANCE: Thank you. Andy, to that point, please.

MR. STRELCHECK: I just wanted to, I guess, seek some clarification from Trevor, and I assume, when you're referring to the agency, that you're referring to NOAA Fisheries, and is that correct?

MR. MONCRIEF: MDMR.

MR. STRELCHECK: What's that?

MR. MONCRIEF: I'm saying -- When I say our agency, it's MDMR.

MR. STRELCHECK: But, in terms of the time series, in terms of the decision about the time series, and so, in my letter, I had laid out a couple of scenarios that were recommended for consistency in standardization, so that the SSC would have that available, and I just wanted to be clear that those were not recommendations of NOAA Fisheries, and it was just for the intended purpose of having the SSC be able to look at kind of the same series of information across all three states as they deliberate over this.

MR. MONCRIEF: Right. I'm sorry if I misspoke there. I think, when I've been saying "agency", I've been meaning from the state agency, but, yes, the scenarios were requested, and we definitely understood where it was coming from, and we got the purpose of them, but it was the choice of the executive director and the agency to put forward this compromise, and this is the scenario that we have.

CHAIRMAN NANCE: Thank you. Paul, please.

DR. MICKLE: Sure, and this is not directed toward Trevor at all, and I'm fairly familiar with the program, and so I'm going to make a statement toward the effort survey, and I brought it up earlier, I think during the Alabama presentation, but, with MRIP, with even MRFSS in the past, the efforts are somewhat consistent in the small states, Alabama and Mississippi, and I remember this because we were going through state species stock assessments.

The effort survey, obviously, I think a lot of conversation here, and in prior meetings, and the effort survey, with MRIP, has been difficult, and it's created these large numbers in small states, but, even in the small states, there is variation within that, because there's more tourism, and there's more migratory from the universe of anglers, within the small states, and so the only point I'm trying to make here is effort not only struggles in small geographic spatial quantitative efforts, efforts in estimating effort, but also just the dynamics of the political and socioeconomic areas of small and large states.

The point that I'm trying to make is it really needs to be looked at from a state and federal perspective of how effort can be estimated and then quantified with uncertainty, and I just don't feel that that's being encapsulated in the calibration process, and I know it's not, because it just isn't, but it certainly demands, I think, some more efforts in trying to do so, because effort, obviously, seems to be the driver with some of these large numbers, and effort surveys are crucial.

You know, intercepts are wonderful, because you're getting the biological data, but you have to have the effort side too, and everybody here understands that the states have very different quantitative efforts in how they are quantifying effort, so to speak, but there really needs to be a really intricate conversation on how it's done, and my last point will be that a lot of the consultant interactions and statements and blessings that were given -- The consultants don't have fisheries backgrounds.

They don't understand the very difficult and complicated interactions with how fisheries work in multifaceted categories and sectors and all these different things, and they're not census surveys in the mail, and fisheries data, as we all know, is incredibly unique to itself, and I think some round pegs and square holes have been slammed through here, and there is shrapnel everywhere. Thank you.

CHAIRMAN NANCE: Thank you. Trevor, please.

MR. MONCRIEF: I hate to keep droning on and keep saying things, but I've got more and more stuff that pops into my head, right, and hindsight is 20/20. Everybody probably thinks that, at some point, we should have seen this coming, but, in reality, it's just not possible, and no one really saw it coming.

The states diverged onto their own paths, and created their own surveys, and they tailor fit them to what each state was able to

do, and I never imagined that the magnitude of difference would occur like this, and I didn't think the patterning would exist in this way, but it's how it shakes out.

The proposals we put forward in the transition process, all the states, I think are -- They are a positive direction, a positive direction that we haven't seen since the state estimates were derived, and so, like I said, we put forward this compromise to try to move forward and try to make a pathway to continue the work that we've been doing and figure out what's going on with our state, so we can produce better estimates, and that's kind of where we're at.

CHAIRMAN NANCE: Correct me if I'm wrong, but Florida has its own estimation of effort, which uses -- Alabama and Mississippi are taking the MRIP effort, and is that incorrect?

MR. MONCRIEF: No, and so -- Richard can comment if he needs to, but what you've got is programs within the Gulf that run a separate intercept, and so that gives you catch rate, and effort survey. With the designs that we have, that are hail-in and hail-out, your effort is coming from the hail-in and hail-out, and it's corrected based on the intercept validations that are observed, and so it's tailored to one fishery, and it's not an overall bulk effort that is then distilled down into a specific species harvest estimate or anything else, and it's a hail-in and hail-out program, similar to logbooks, or quotas, or anything else, and it's -- That is where the effort is derived.

CHAIRMAN NANCE: Okay. Thank you. Richard.

DR. CODY: Just to make a comment that all of the surveys account for under coverage, we'll call it, in different ways, and so, in the complement design, which is in Florida and Louisiana, with MRIP, you have a separate effort, and you have a separate catch survey, and so it's done separately there, and the two pieces are tied together.

With the capture and recapture methodology, you have a reporting feature, and that's the census part of it, and then you have a validation component, it's called, where, basically, you sample the trips coming in, and you get an estimate of under coverage from that. There is some important assumptions associated with both of them, but one of the assumptions, with capture and recapture, is that the information is independent, and so the reports are independent of the actual validation, or the capture is independent of the recapture.

There is very different ways in the way the surveys operate and how they -- Then the scopes of the surveys are very different as well, and I wanted to just correct, for the record, since there are presentations that are associated with each of the states, that -- You know, I made this point earlier on, is that one of the features of both the complementary designs in Florida, and with MRIP, and Louisiana for that matter, is that the sampling is weighted.

That weighting has to be taken into consideration when you present information on the distributions of intercepts, and, you know, on two occasions today, we've seen where that hasn't happened, and the other point that I wanted to make, as well as that, is that Trevor's point about the correlation between the magnitude, or the numbers of intercepts, versus the magnitude of the landings, is not necessarily true for probability-based surveys.

You can get an estimate with one intercept, and I think that's what he's trying to get at, is the uncertainty associated with low sample sizes and being able to generate an estimate, and you probably would get, I would say, a stronger correlation between the magnitude of an estimate and not the number of intercepts, but rather the variance of those estimates and the numbers of intercepts. I just wanted to clear that up for the record, and not to go against what Trevor has said, but just to clarify my perspective on it.

CHAIRMAN NANCE: Thank you. Then a clarification for Luiz on that.

DR. BARBIERI: Yes, and so, Trevor, on that slide -- Thank you, Mr. Chairman. Trevor, on that slide there, just to the point that Richard just brought up, are those estimates already -- You know, are they actual final estimates, right, and they already take the weighting into account?

MR. MONCRIEF: Yes.

DR. BARBIERI: Thank you.

CHAIRMAN NANCE: Will, please.

DR. PATTERSON: I don't want to put words into Trevor's mouth, but I think the kind of gist of that discussion about the relationship was accurate estimates, and, if you have one sample, you get an estimate, but we want accurate estimates, and precise estimates, you know, in that respect, and I'm wondering -- This is a special case, and Mississippi is distinctive, given its size, and, actually, the fairly low amount of effort relative to other states,

but I'm wondering -- As the federal agency, NOAA Fisheries, is reconsidering FES and estimating effort and producing MRIP-based estimates for recreational landings, it seems, to me, like this is a great body of data, given that it's a near-census of catch and effort for several years now, where you could do simulations based on what's known, and then look at different sample designs, in Mississippi in particular, and figure out, okay, what would produce an accurate and precise estimate of effort and landings, and maybe that has implications Gulf-wide.

As Paul mentioned before, like these issues aren't -- They aren't just unique to Mississippi, but it gets smeared when you get larger states, and more intercepts, and more information, so that, if you have out outlier and one wave, and maybe you have ten other data points, or twenty other data points, and so it gets averaged out, and it dampens that signal, but it just seems like this is a prime dataset to actually examine those dynamics and how you would set up a design that perhaps is a more accurate and precise method.

CHAIRMAN NANCE: Richard, please.

DR. CODY: Tom can speak to this too, but I think that's part of the goal of this research track and the transition planning process, is to use the information from all of the states, and MRIP, to try and describe some of the issues related to non-sampling error to begin with, but also to try and get a sense of where the true reality lies for effort.

We have, just as some of the states have as well, we've had ongoing efforts to look at ways to improve the survey, the FES, things like question order, shifting around some of the components that we get from the APAIS into the FES, to get a sense of, you know, are we in the ballpark or not.

One thing I will say is that some of the simulation work that John Foster has done relates to the patterns, or the trend, information, and, if you basically put these surveys in operation in all of the states, each one, and compare them, they have similar trends. Where the issue lies is that we have different surveys now in every state, and so you can't just add them together, and that's the calibration dilemma.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Will's comment kind of got me thinking about this, Richard, and, you know, considering what we have there now on the screen, right, and I would imagine that, in general, these estimates probably came out with a

significant amount of PSE, you know, fairly high PSE values, at least some of them, right, and, in looking at the table, that seemed to pan out.

You know, would it be possible to apply, you know, some technique, like the approach that you guys have used, right, to sort of adjust the weighting there and kind of try and address some of these potential distortions that may be happening with one side, you know, driving, just by random chance, right, the outcome of a final estimate that may or may not fall in line with what would be expected, right, and I know that this is quite a bit of work, but, in terms of this calibration, which is important, you know, perhaps if they were to see, meaning the State of Mississippi, they were to see revised estimates of these FES landings that already try to account for some of these potential sampling issues that invariably will happen in any random sampling, right, if that would help them reassess their ability to revisit this calibration at a later date, soon.

CHAIRMAN NANCE: Richard and then Trevor.

DR. CODY: I think that's a heavy lift right now. I will say though that, if we're talking about sample sizes, I mean, there are some characteristics of low sample size, and probability-based sampling, that we can kind of rely on and use for assumptions.

I would hesitate though that we accept, on face value, that counts of sample sizes that we have here, and we don't have the weighting information for some of this information that Trevor has presented. Obviously, for the estimates, it's weighted, but, for the sample size comparisons, things like that, we don't have that right here, and so I would hesitate to kind of read too much into that at this point.

I will say though that certainly, you know, that was one of the recommendations, that we look at simulation scenarios, we'll say, to see if we can, you know, maybe refine, or make the estimates more precise, but I think, right now, non-sampling error seems to be a big driver for differences between the surveys, and so those changes would have to be put in place as well, or at least accompany the study.

CHAIRMAN NANCE: Let me let Trevor respond.

MR. MONCRIEF: Let me clarify real quick. The data labels on there, that's not sample size. That's the number of days that the season was open, those data labels on top, right, and that's not sample size, and that's not part of that whole thing, and so I'm

sorry for that confusion, but I wanted to put that there, just so you kind of see the patterning.

DR. CODY: I wasn't referring to that particular slide.

DR. BARBIERI: Right, but, Richard, to that point, what I'm saying is the council, the Gulf Council, needs to have a calibration completed, and this is the charge of the council, to monitor these fisheries, right, and so I'm not talking about a continuous, or a holistic, evaluation of all the estimates, but, for those years in question, for those waves, I'm thinking, if there is a little cleanup effect --

I mean, if you look at the PSEs, and forget sample size, right, but, if you look at the PSEs for those estimates, and you feel that they are above what you consider your standards for a good estimate, you could do a little exploration of what may have caused that, so that you yourself are looking just at the FES estimates and saying, well, perhaps there is room for improvement here, and I can try and clean them up a little bit, and I'm just thinking, you know, how do we get out of this impasse, you know, given the fact that we need the calibration, and these estimates that are being presented are highly unstable.

CHAIRMAN NANCE: Trevor, please.

MR. MONCRIEF: Okay, and so I kind of get the direction you're talking about, Luiz, but I think -- One of the things that I guess I didn't point out, and that's one of the reasons why I stayed away from the PSEs as a whole, and, I mean, we're just not -- We don't really use it in this scenario, and we usually take point estimates as point estimates, but, if you look at the most troublesome estimates, right, the ones that spike the highest, they have the lowest PSEs.

That's just the nature of how it goes, right, and it's a large sample size, because it's all coming from a single site and everything else, but it's a descending -- 780,000 pounds is the lowest PSE on record, and it's one of the most troublesome estimates in the time series, and so it's not quite as easy as just saying, hey, let's try to apply something else like that, and, I mean, the last thing I will say is it's an impasse if the compromise that we presented is deemed as not being used, and, if that motion is passed, like I said, it's got to go back to the agency, and we'll have to go from there.

CHAIRMAN NANCE: Any other questions for Trevor? I want to say, for each state, Tiffanie and Kevin and Trevor, we greatly

appreciate these presentations. A lot of thought and effort went into those, and I think you gave a -- Each of you gave a great presentation about what is happening within each of the states, to give us some things to be able to reflect upon. Let's go ahead and go over those.

MR. MONCRIEF: Number of intercepts, that's what these are, and, now, these were produced a long time ago, and they've been presented twice, and so maybe we'll try to work on getting those wave intercepts and see what it comes out of it, and so let's just skip to the next one.

Now, when it comes to the low sample size, and the volatility that occurs, there is concerning trends that can happen for a given species, right, and I told you this wasn't just red snapper for us, and it's multiple of the state species, but what we did was go into it with the same thought process, and we looked at the greater amberjack species that this group, and the council, has struggled with for a long time.

Essentially, what we kind of see is that there's spikes that occur within the fishery that don't necessarily correspond to logical times when the fishery should be operating at full, and there's times, in Mississippi, where we intercept one greater amberjack, and it's one survey. Now, given that you have to apply the weights to it, but it results in 300,000 pounds of harvest, and another one is 270,000 pounds of harvest.

These spikes occur every now and then, but the things we have to look out for, when it comes to examining these things, and what I brought up in the SEDAR workshop and everything else, are the times where this volatility takes place in multiple states in a given year, 2016 and 2018 for greater amberjack, and you will see that there are spikes that occur that don't necessarily occur in times where you would expect to see them, in two states, and, when you add those estimates together, they make up for a large proportion of harvest, and so that's the last thing I will say on this.

I know it's not red snapper, and it's not calibration, but I had those last two slides in there just to say, you know, we've done what we've done, and we've looked further into it, and we're trying to figure out, you know, the best path forward, and, you know, it seems like there's some considerations here, especially when we go through this research process, as to not just looking at it from a red snapper perspective, but maybe seeing how it affects on other ends, but I appreciate you all's time. I appreciate Richard, and his group, for all the help, and I haven't done this alone, and so thank you all for you all's questions, and we can go on with the

rest of the discussion.

SSC DISCUSSION

CHAIRMAN NANCE: Trevor, thank you so very much. We're going to go ahead, and we're going to need some general discussion, but I want to read over the TORs, just so we can remind each of us, and there they are up there on the screen, but, basically, we have three of them, and the SSC will consider the following terms of reference for each of the states' proposals.

Number 1 is, is the proposed revised calibration ratio calculated in a method that is not dissimilar from that which was approved as consistent with the best scientific information available by the SSC in its August 2020 meeting?

Number 2 is, is the justification for the years and the waves recommended for calculating the proposed revised calibration ratio -- Are they sufficient? If not, describe ways, if possible, and offer alternatives.

Number 3, are there any additional clarifications necessary for considering a state's proposed revised calibration ratio as being consistent with BSIA, and so those are the terms of reference that we've been given for this. Please, Sean.

DR. POWERS: Andy made reference to a letter that he sent the states, with some not conditions, but some guidance from NOAA, and do we have that letter?

CHAIRMAN NANCE: There was a letter in -- It was from Richard, and that was sent to each of the states. Is there a different letter that was sent by Andy?

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

CHAIRMAN NANCE: Okay. Luiz.

DR. BARBIERI: Just to Sean's point, I mean, I think this is important, because a lot of the parameters, right, for how this calibration was to be conducted, you know, is explicitly outlined in that letter.

DR. POWERS: That doesn't mean that we have to agree with what Andy said, but, yes, I would like to know what he said.

CHAIRMAN NANCE: I would like to see it, yes. Will, please.

DR. PATTERSON: I have a question, and it relates to the Term of Reference Number 2 here for Mississippi. In the letter from the state, the Mississippi calibration document, the final, I guess it's page 4, there is the table that has the year scenario, 2018 to 2020, the MRIP cumulative landings, the Tails 'n Scales cumulative landings estimates, the calibration factor to FES, the FES to CHTS, and, at the very end, you have the resulting ACL and then the percent decrease, at negative-27.3 percent. Trevor, does this -- Does this apply only to Waves 3 and 4, or the ACL then the full landings of the entire season?

MR. MONCRIEF: Since it's the calibration ratio applied to the entirety of the ACL, it's the ACL for the entire year.

DR. PATTERSON: Okay, and so what this -- What likely is happening is, because the landings estimates are higher, and there's so much of a discrepancy in some years, in the first and last waves of the year, then there's probably a bigger percent decrease, in Waves 3 and 4, that is offset by the higher FES landings later in the year, in waves outside of 3 and 4, and is that what is happening here?

MR. MONCRIEF: I will try and find and follow your logic here, and so I missed the first sentence of what you were saying, and so the largest disparities that we observe are typically within Wave 5, because our harvest estimate is below 10,000 pounds, and the harvest estimate, from the federal survey, could be upwards of hundreds of thousands of pounds, and I think the max is like 360,000, or 330,000, pounds.

Now, that's the largest disparity in magnitude. The second-largest disparity in magnitude is Wave 3, where that's our peak wave, but the harvest estimate, for the federal survey, goes from 250,000 pounds to 500,000 pounds, down to below 200,000 pounds, up to 600,000 pounds, and so what we've provided, the compromise of 2018 through 2020, and Waves 3 and 4, is just finding a balance between all of that, to propose what we think is an adequate decrease for the fishery, while complying with calibration. I am sorry if I didn't answer your question, and I was trying to follow where you were going.

DR. PATTERSON: No, and you definitely answered it, and it's what I thought that I understood, but I just wanted to clarify it. Thank you.

CHAIRMAN NANCE: Sean.

DR. POWERS: I guess, while we're waiting for that letter, I will

give my overall impression, and I think all the states did a great job explaining what they've done, and the basis for their different years. I mean, what I'm struggling with is I think my opinion is that we should -- The state fishery biologists, and those fisheries agencies at the state, have the best idea of what's representative of their fishery, what years or waves.

You know, I don't see any calculation problems, and, I mean, it's a simple ratio estimator, and I guess Kevin did bring up a thing on -- He did do it two ways, where he added up all the harvest across the years and then took the average, or the average of the ratios, and I think everybody looks like they're doing the average of the individual ratios, and so I really think that, in my opinion, that we should defer to the states on what is most representative, both in hindcasts as well as going forward.

I guess my concern is though, if you don't have at least three years -- I mean, the point of just having two data points -- I mean, I want to, you know, be deferential to the states on how they decide what's representative, but, you know, the three continuous years, kind of like what Trevor did as a compromise, that they might not believe all years, I think that is probably the direction that I'm looking more and more into.

CHAIRMAN NANCE: Paul.

DR. MICKLE: Thank you, Mr. Chair. Sean, you're proposing -- Did you say consecutive years or just three years?

DR. POWERS: (Dr. Powers' comment is not audible on the recording.)

DR. MICKLE: Thank you.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Well, it's sort of a difficult situation. I mean, I'm sympathetic to the issues that Mississippi, and to some extent Alabama, have, because they're small areas, and we all know, and have known all along, that the MRIP program is just not suitable for trying to use estimates in such small areas, and then, when you try to parse it into waves, I mean, you start getting CVs that are well over 50 percent, which means you really have numbers that don't have much meaning to us, and so we're coming in and we're taking a state survey, Tails 'n Scales, which seems to be well-done, and it's been looked at and all, and it's fine, but you're trying to calibrate with state estimates from Mississippi that aren't really all that informative, because the CVs are so high.

That gets you into difficult questions, and what can we do, as an SSC? Well, I mean, I can look at Sean's issue about two years, and, yes, that's a bit of a difficulty, when you get to two years, and then, when you start saying which year should we exclude, well, I look at the Mississippi, and it's not clear, to me, why you would exclude 2021 and not 2019, and those Wave 3 catches look very similar, and they seem subject to the same things.

I understand Mississippi's position that those estimates -- They believe they're unrealistically high, and are throwing things off, and that's kind of an operational, practical matter that the council and NMFS and Mississippi need to work out, but I'm not sure, in terms of science, what we could say.

Now, I look at what everyone has done, and they have used the MRIP surveys, and they've used their own surveys, and the math, and how they've calculated these things, seems to all be correct, and so, in that sense, they've pulled in the best information we've had, and we made some decisions about it, but, when you start parsing down which years to use exactly, that's where it starts getting a little difficult, for me, because I am not sure that I've heard really compelling reasons for eliminating 2018 and 2019 in Alabama, and it's not clear to me, other than it produces unacceptably-high estimates, how you decide what year not to use in Mississippi, and I think that gets difficult, saying that choosing those years is based on solid scientific rationale, and so that's where it gets us in a little bit of a -- I mean, I don't want to tie people's hands, because regional management is what we're doing, and so we've got to deal with the fact that we have very high CVs, and problematic catch estimates, in some of these small states.

I think that means that managers are going to have to exercise some judgment calls and take into account the practical implications of things, but it's not clear, to me, how much we, as an SSC, can really weigh-in on it.

CHAIRMAN NANCE: Sean.

DR. POWERS: I mean, I agree with your kind of last statement, and that's what I was getting at, is that we have to kind of trust the judgment of the states in this, if they really believe that this is the representative years, but, to the year comment, and, like I said, I would prefer to see more years, at least three, but, on the flip side, Louisiana is only dealing with one year. That's all we have in Louisiana. I mean, we're deferential to Texas, as well as Louisiana, as far as how they handled the calibration that they accepted, and so I'm still trying to balance that as well in my head.

DR. CRABTREE: I mean, the difference, with Louisiana and Texas, is we don't have anything in front of us right now, right, that we're dealing with, and so I'm not sure what they've done in Louisiana, because I've never really seen that, and, in Texas, I don't think there is any calibration or anything for Texas.

CHAIRMAN NANCE: Paul.

DR. MICKLE: Thank you, Mr. Chair. Roy, I completely agree with what you said, but there's a charge here, within our scope, and Number 2 is, is the justification of years and waves recommended for calculating the proposed revised calibration ratios sufficient, and so, whether we listen to that or not, and I guess it's guidance, but, moving forward --

Again, these are scientists from the state giving the justifications to scientists on an SSC to say, and so they can provide their justification, and we disagree with as a group, and that's our right, but I think we do have that ability, so to speak, and I think we have to take that ability on, because it's scientist to scientist, and this isn't a non-scientific exchange here of a recommendation. The justification for years should come from the state scientists to the SSC, and the judgement should be made at this level. Thank you.

CHAIRMAN NANCE: Will.

DR. PATTERSON: I agree 100 percent with what Paul just said, and I think that's what we're being asked to do. Unfortunately, as I look at the information from the various states, it's hard, for me, to figure out what is best science in there, and so that's the dilemma I have, is I don't know how to pick.

CHAIRMAN NANCE: Trevor, to that point?

MR. MONCRIEF: Yes, and, I mean, I've kind of thought about this subject a little bit, and, just in thinking that through, I get the charge, and I get what we're tasked with doing, and I know what we've presented, and, at some degree, to some point, this is almost like management taking on uncertainty, and taking on risk, as to what's chosen, as far as calibration goes. I mean, I can see how it's a difficult decision, and I know we've tried to think through it a million different ways, and it always comes out to the same.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. A follow-up to Roy's and Paul's points, right, and, I mean, if we look at our Number 3 Term of Reference, it says, if we don't think that we have, in front of us, what it would take for us to properly review, right, these calibrations, then we can request, let them know, what is necessary to be provided, and, if there is additional information that we feel would help us better assess these calibration ratios, we can ask for it, right, and, on that point, I would say, you know, for Alabama, for example --

Kevin, if you're listening, I mean, I do feel that having more information about those different years, for example catch rates, right, and so the information that you're providing there for the different years, sets of years, if we had more detailed information -- I want to see, you know, any potential changes in the survey, or changes in general, that happened during those years, to see, okay, what would justify, you know, changing the status quo, what we have in place right now, and that's difficult to do without looking at some of this other information.

CHAIRMAN NANCE: Tom.

DR. FRAZER: I am struggling, and so a couple of things, right, because, I mean, I recognize the amount of work that goes on at the state level, as well as the federal level, right, and the various objectives, right, behind that work, and what I'm trying to think about is when a recommendation is going to come to the council, right, and I want to be able to look at that recommendation and feel good that it's a scientifically-defensible recommendation.

The problem that I have seen, right now, is that what it appears, to me, is that there is probably general agreement that the MRIP sampling, or the survey, doesn't -- Everybody would agree that it doesn't perform admirably with regard to these small kind of locations, and Mississippi being the example there.

When you look at, for example, those PSEs that are associated with the MRIP estimates, they're 50 or 60 percent, something like that, and they're pretty extreme. On the other hand, right, you've got a state survey that is certified, I believe, at this point, right, and has relatively low PSE equivalents, one to five, or something like that, and so we feel pretty good about the confidence in that number coming out, and so I don't know if this is appropriate, Mr. Chair, because it's a bit of a deviation, but to say the best available science, in this case, for this smaller place, is in fact the state data on their own, right, and that -- I mean, we still have a ways to go.

I'm not saying that there will never be compatible -- That's what we're working to do, right, to try to improve the comparability of the two datasets, right, and make them more compatible, but I certainly don't want to get into a position, at the council level, saying that, you know, we've cherrypicked stuff, just to make it work, right, and we can't defend it.

To me, it seems like a more defensible way to go would be to say we recognize the limitations of one survey instrument, right, or one sampling program, and prefer, or see the other perhaps, as the best available information at this time, even though the SSC doesn't -- Is consistent with that best scientific information available. I'm going to look to my colleagues at the federal level, who oversee this process, to see if there's -- If that's an allowable thing to do, because I'm not sure.

MR. STRELCHECK: I wish Mara was here, and, I mean, I think this really gets down to the best scientific information available determination and the record that this SSC would build, in terms of making that decision.

The immediate thought I had, when you were suggesting this, Tom, was, if you make that argument for Mississippi, which may be fine, then Alabama hasn't analyzed their data in the same way, but does it apply equally to Alabama? I don't know, and the SSC doesn't have that information in front of them to kind of make that determination, at least as of today, right, and that could be something that could come back to the SSC.

The bottom line is I think it does come down to the record that you would build and whether or not there's been sufficient information today for you to argue that the calibration, as presented, is not appropriate and reflective of what the situation is.

It still, I think, challenges us, from an agency standpoint, as to then how are we going to convert, or not convert at that point, from the assessment, right, because we are plugging in data into the assessment that's going to use FES, right, and so that, I think, would have to be a scientific decision, in terms of what data streams are you then now using for the stock assessment, going forward.

DR. FRAZER: To that point, Andy, I mean, that's kind of what I was talking about earlier, about whether or not the data, right, could be compared to the regional data, and I think there's a little bit more work to be done there that might allow that to

happen.

CHAIRMAN NANCE: Let me just throw in this too, because it's great, and we're having, I think, good discussions, and maybe it would be beneficial to take each state and go through the TORs with that state, and, if we find out that we need more information, then we say that, and Florida may be -- What we're coming up with for Florida may be very different than what we recommend for Mississippi and Alabama, but I think taking each of the states -- We've seen the presentations, and we're happy with what we've seen, and we want to get more information and those types of things, and we'll go through those and see where we stand and what we would need, what we would like to see, to be able to further our deliberation on what we want to see in the future. Paul, you had a comment, and then Trevor.

DR. MICKLE: I will be brief, but Andy pretty much said what I was going to say, and, Tom, to your question, I guess, if you approach it -- You lose the ability to do a stock assessment, because you lose your historical -- You're saying to use one over another, or maybe I misunderstood. Right?

DR. FRAZER: Well, I think there's -- I mean, we would have to explore this a little bit. I mean, at the end of the day, we would hope to get, by 2024 or 2025, where we would actually use that data in the assessment, and we're not doing it now, right, and so, in the interim, we have to find kind of a stopgap approach.

DR. MICKLE: Then the last thing I will just say is that that's really two purposes of calibration, right, for management, in-season management, and then there's the scientific side of an assessment. The calibrations, you have to calibrate, and I hate the word, and it's a bad word, in my world, but it has to be done, in my opinion.

CHAIRMAN NANCE: Well, it has to be. In order to come up with numbers that we're able to use, there has to be that calibration.

DR. MICKLE: MRIP is -- It's not made to do state management, and it's not made to do that, but that's why all of this has occurred, and some people forget that, but it's designed to do a national look, and these outliers -- They go away when you just look at Gulf-wide. When you get away from the states, at least it works a lot better, and so it's just different, that's all.

CHAIRMAN NANCE: Thank you, Paul. Trevor.

MR. MONCRIEF: I mean, I understand the proposal, and I feel like

setting that precedent is a -- It's a precedent, and it would carry on, and I don't think now is the time to do it, to be honest with you, and I feel like what we've proposed is reasonable, the body of evidence we've proposed is reasonable, the effects that we have, and the reality of what we're trying to do is figure out a way to update these ratios, for the next couple of years, until the next management advice comes out.

We're doing this in absence of management advice, and, I mean, ours is a compromise, and it's a compromise for exactly what we provided, and, yes, I just -- I'm just trying to -- I'm trying to think through it all, but we're looking, realistically, at two to three years, and that's what we're trying to do, is find a gap for two to three years and do the research, try to get at some of these non-sampling errors, because the calibration that we've proposed here is for management. It's for quota monitoring.

When we go forward to the assessment, there will be more years of data, and there will be a lot more things that have to be taken into account. I mean, things are automatically going to have to shift, but what we're talking about now is trying to get through the next two or three years, and so I think it's just a little bit different situation overall.

CHAIRMAN NANCE: Thank you. Will, please.

DR. PATTERSON: Thank you, Mr. Chair. I don't think, as we look at this, we should be focused on things that are driving bias and precision when considering which years to include or not include, as our recommendation for a given state, if we're able to make such a recommendation, and not necessarily look at what the effects are going to be on the state-specific ACLs.

In Kevin Anson's presentation, his third conclusion made a statement about the current calibration ratio applied to Alabama's ACL will result in a twenty-day fishing season, using the 2018 and 2019 data, and I've been confused about that statement, and I don't see anything, in the rest of the presentation, that demonstrates how that was calculated, and I don't see anything in the report that demonstrates how that was calculated, and so I'm confused for two things.

One is how did the twenty-day season estimate -- How was that computed, given the fact that, this last year, less than half the quota has been landed, was landed, or at least the current estimates, and then, also, the current calibration ratio, how would that differ from 2018 and 2019? It seems like we're talking about two different things there, as far as calibration ratio, and so,

if Kevin is still on the call, and he could address that, that would be great.

CHAIRMAN NANCE: Thank you. Kevin, would you be able to address those, please?

MR. ANSON: I will try to. On the first point, I was simply referring to -- When you look at the 2018 and 2019 data, and the characteristics within that season, and that would relate more to size of fish and harvest rates per angler trip, and, if you had those similar characteristics, with the quota that would result from using the current calibration, that potentially we could have a twenty-day season, if those anglers show up.

Now, how that was computed was simply -- You know, again, I mentioned earlier that we are tracking this in-season, weekly, and so we're essentially just, you know, combining each day's worth of effort and catch, one on top of another, and so using that, you know, monitoring, at a daily level, the amount of pounds that we would get, based on our current ACL, and those effort estimates, or values, per day, from 2018 and 2019, would result in a twenty-day season.

Now, will that essentially occur for next year? It may not, and I was just giving an example as to the potential for the length of the season, based on the given pounds, and that the impact of that would just be that it would lead to issues that were -- That I brought up relative to, you know, some of these potential inconsistencies, or data issues, related to CHTS, in that, as you get a shortening of the season, you get more anglers showing up at these sites that then, when they're, you know, attempted to be counted, or interviewed, that it becomes problematic then within the state, and it could lead to, you know, affecting the weights of those and the adjustments in the amount of raw effort, raw trips, that are being generated.

It's just kind of a self-perpetuating situation, is that, the shorter you compress the season, the potential exists, you know, that the sampling methodology doesn't lend itself to more accurate estimates, and it lends itself to more inaccurate estimates, potentially.

CHAIRMAN NANCE: Thank you, Kevin. Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Well, I am trying to get -- Tom, to your point, right, I'm trying to get to what motivated the council to make this motion and have the SSC revisit -- I mean, we had gone through a pretty long process, and we had, two years

ago, a workshop that was dedicated, an SSC workshop, and NOAA Fisheries was part of it, to coming up with these calibrations, and so what is -- What is concerning? What is concerning to the council, in terms of the current ratios, that are generating this request for them to be revised and re-reviewed?

DR. FRAZER: I think, again, there's a recognition, by our state representatives, right, that the data that they're collecting in their state programs aren't meshing well at the federal level, or the MRIP data, and they feel like they've invested heavily in those programs and are providing a high degree of accuracy and precision in the data that they're making available, and they don't want to be penalized for that, and I'm speaking for them, right, and so I think what the council said is, hey, you know, sure, these programs continue to evolve, right, and more data are accumulated, and you'll have a better idea of the relationships.

In its most simple example, Luiz, you know, even if you lengthen the time series, right, you're likely to change the nature of that calibration relationship, and it may be by 10 percent, or something like that, which could result in a considerable amount of fish, right, for a particular state, for example, consistent with how they view their data, and so I think the first thing was to be able to say, okay, you know, as the programs mature, and we collect more data, are they in fact more representative, and are they capturing the situation as we see it, and should they be adjusted accordingly.

The second one is clearly recognizing that, you know, we have a sampling program in place that was not designed for these in-season kind of monitoring things, and so can we improve on that, and we may not get there, in that regard, today, right, and that's a part of some of the larger efforts that Richard alluded to before, but we certainly just didn't want to say one and done. When we did Amendment 50, and these are the calibrations, say we're good, and we recognized that there was work to do, and, you know, I think that's where we are.

I think we should try to accommodate, to the best of our ability, and my only reason for the comments before is that, you know, I really respect what comes out of this body, right, and it's a scientific body, and the recommendations that they make allow us to do the work on the council level, right, with a high degree of confidence, and we can defend our decisions, right, and that's all I want, is I want you guys to make a good scientific decision.

CHAIRMAN NANCE: Thank you. We're going to go ahead and take a break, and we'll come back at 3:15, and here's what I want to do.

We're going to start with Florida, and we're going to go through these TORs and see where we're at with Florida, and then we'll move on to Alabama, and then we'll move on to Mississippi. I think that will give us some direction in what we're trying to accomplish here. Thank you.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: We'll go ahead and get started, and we'll go ahead and gather back. What I would like to do, in thinking about this, is go through each of the states, and we've seen the presentations, and certainly I think we've had ample time for questions and responses and things like that, and then we want to go through for -- We'll think about Florida now. Get your minds on that state presentation, and we'll go through the TORs and responses on how we feel about each one of those and where we want to go and what we would like to see different, if anything.

With Florida, I guess the first is, is the revised calibration ratio calculation method similar to what it was in August of 2020, and, from what I saw, it's a continuation of that, and it seems to be the same methodology, and maybe some difference in what's proposed for the years, but the calculations seem to be the same, and is there anyone that disagrees with that assessment?

The second is they proposed some changes in years, in their presentation, and so do we feel like they presented justifications for changing the years? I think we went -- Was it 2015 -- Can you bring it up, maybe? I think, before, it was 2015 to 2017, right, and the years that are being proposed now are -- Go ahead, Tiffanie.

MS. CROSS: It's the entire overlapping time series of 2015 to 2019.

CHAIRMAN NANCE: Okay. With the exclusion of 2020.

MS. CROSS: Correct.

CHAIRMAN NANCE: I feel like, from the presentation that Tiffanie gave, there was good justification for taking out 2020, and it had changed a lot in the number of samples that were taken and things like that, and so I felt like that -- They had justification in there for the removal of 2020. Sean.

DR. POWERS: The other states, Alabama and Mississippi, had issues with, in particular, 2017, the 2015 to 2017 window, where the seasons were compressed, or shortened, and you all don't have those

concerns? You think those years still --

DR. BARBIERI: Well, I don't know if those things impacted, right, the data, or the estimates, and potentially they have, right, and the reason why we are using 2015 to 2017 was to follow the SSC's recommendation to have the calibrations between state surveys, FES, and CHTS consider just the years for the benchmarking, where there would not be any conversion of FES to CHTS there, right, and so, if the committee feels that removing 2015 to 2017 is the most justifiable, by all means, just bring it up, and we'll discuss the merit.

CHAIRMAN NANCE: Because, from my perspective, we're moving away from the telephone survey, and we have just FES against the SRFS component, and so I don't see any issue with that, and I think it's justifiable, for that reason. Paul.

DR. MICKLE: Thank you, Mr. Chair. You're just identifying 2015 as being the earliest year because that's when Monroe County was brought in, creating the -- Is that right? Is that correct? The justification for 2015, where does that come from?

DR. BARBIERI: That was just the first year that the survey was fully implemented.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Some of the justification was that the fishery changed a lot up until 2017, and we had very short federal seasons, and extended state-water seasons, prior to that. Then, in 2017, the Secretary of Commerce illegally reopened the fishery, with a lack of any real justification, and allowed far too much fishing to -- Then the fishery went to the EFP and state management, in 2018 and thereafter, and so there was like an abrupt change in how -- The fishery was structured that way, and it changed then.

Whether that -- Whether you would have a stronger calibration, if you eliminated 2015, 2016, and 2017, I don't know, or whether it would really make much difference at all to the outcome of it, and I don't know.

DR. BARBIERI: Then just one comment, before you respond to that specific question, Tiffanie, is I think it's important to make a point here, because, when we submitted our original documentation, right, for review, with the revised calibration, we did not choose a preferred alternative, because we did not feel that we needed to.

I mean, the idea was to provide -- I mean, this is what the letter requested explicitly, right, is that we provide calibrations for different sets of years, and we did, and so one of the reviewers, in the initial review process of those, before we went to the briefing book -- We were asked why not, and that we should pick a preferred.

I think Florida decided to go with the longest time series of data, just because that's more data, but, again, I don't think that we have any particular preference on those specific time periods, if the SSC has good justification to pick one set.

DR. CRABTREE: Okay, and so I look at the figure you have that compares the different alternatives, and, I mean, none of them are substantially different than the other, and so what choice you make on that doesn't seem to change it, and I guess one could argue that Alabama and Mississippi -- I think their surveys were designed later, but I'm not sure, and so they didn't have the choice of using all those early years, but they argued not to include those early years, and so, if we wanted to have some consistency, in that respect, that might make some sense.

CHAIRMAN NANCE: Tiffanie, please.

MS. CROSS: Thank you, Mr. Chair. Jessica, can you please bring up Slide Number 17? It shows the table of the ratios for each scenario, and so, if you're looking at the SRFS to CHTS conversion type, with landings in pounds, those last two scenarios -- The first one is 2018, 2019, and 2021, and the ratio is 1.34. The next scenario is 2015 to 2019 and 2021, and that ratio is 1.24, and so it's a tenth difference. I just wanted to point that out, that we provided that, so you can consider it.

CHAIRMAN NANCE: Sean.

DR. POWERS: I wasn't asking that question for -- Because I know it wouldn't really matter that much, but it was similar to Roy's point, that, if we want greater consistency, and we think there is a problem, with the fishery changing into a more stable, longer-season one, then it makes more sense.

CHAIRMAN NANCE: Do we have any -- Luiz.

DR. BARBIERI: To that point, the reason that we went with 2015 to 2017 before, and the SSC's recommendation, was because, at that time, those are the data that were available, right, and now we have more data, and so changing those time series makes sense.

CHAIRMAN NANCE: Basically, you're just adding on years to the timeframe, excluding 2020, and I need, just for the record -- The discussions we're having are simply for monitoring the fishery and not for anything else.

DR. BARBIERI: Yes.

CHAIRMAN NANCE: Okay.

DR. CRABTREE: Jim, if I could.

CHAIRMAN NANCE: Go ahead, Roy.

DR. CRABTREE: If we went to eliminating 2017 and prior, then we would be saying, okay, we're going to use our calibration years during the period in which regional management has been in place and not the prior management regime. We couldn't do that the last time, because we didn't have enough data, and it wasn't an option, but we now have three to four years, depending on whether you can use 2020 or not, and that seems to be a sufficient number of years, and so, if we wanted to achieve some consistency on that front, I think you could.

CHAIRMAN NANCE: Paul.

DR. MICKLE: I agree, and, also, just with the number of years, we need to be careful going across the states here, because some states shut down with COVID, and didn't do intercepts, and some did, and so there's some metrics there that we need to account for and not forget. Thank you.

CHAIRMAN NANCE: Yes, and I think we need to, in some ways, do these individually and not say, well, let's do this, because this is what Alabama has, that type of thing. Let's do Florida by itself, for consistency, I think. Andy.

MR. STRELCHECK: I'm not weighing-in on your determination, but just, I guess, for thinking about all the states, one of the things that I noted in Kevin's presentation is an average based on kind of the cumulative sum of landings, versus an average based on the ratios for each year, and so I think that's important to take into consideration as well, from a consistency standpoint, and is there one method or another that needs to be considered across each of the three states, in terms of how the calculation is made, regardless of the data used.

CHAIRMAN NANCE: Remind me, Tiffanie, and, in Florida, it's --

MS. CROSS: In Florida, we summed all of the estimates and produced one ratio, but I think we went through the exercise of calculating it the other way, and they were the same.

CHAIRMAN NANCE: I would think that would be different, just by the methodology.

MR. MONCRIEF: I think it's somewhat communicative, but, the last time we did this, in 2020, it was the sum, and the sum, and that ratio was it, but I do think it's communicative, and it works out either way.

MS. CROSS: Right. That's what we found, also.

CHAIRMAN NANCE: Okay. Will, please.

DR. PATTERSON: I'm looking back through the presentation, and it may be in the report, but we don't actually see, that I can put my finger on, the 2020 Florida estimate, versus the CHTS, and what's that ratio?

MS. CROSS: We didn't include 2020.

DR. PATTERSON: You didn't include it in any of the time series where you're computing your mean. However, do you have that estimate? It's not in the table, what the actual landings estimates are.

MS. CROSS: Yes, and so we can produce that estimate. We have that estimate. We just didn't include it at all in the report.

DR. PATTERSON: Yes, I understand that, and I'm curious what it is.

MS. CROSS: I will have to look it up for you.

CHAIRMAN NANCE: I think Bev can look at that up. Okay. While she's looking that up, are there any other additional clarifications that are necessary for considering the state's proposed revised calculations? Sean.

DR. POWERS: I would like to go back, because I guess I thought that everybody was doing the average of the annual ratios, and so they're not -- I mean, I know that Alabama did it both ways, but you said, if you had three years, you summed the landings and just calculated one ratio, because, I mean, in some ways, I would think that you would want to average the annual ratios, because you would have -- If you assume years of replicate, you would have some

replication there.

MR. MONCRIEF: The direction we were given, and what was reviewed by the consultants in 2020, when we came up with the original ones, was summing and taking the ratio, and that's what was approved and moved forward, and I don't think there's much difference between the two, and I think it's the exact same --

MS. CROSS: It is exactly the same, whether you are summing before you calculate the ratio or, for each individual year, you calculate the ratio for each year and then average ratios across years, and it's the same.

CHAIRMAN NANCE: Luiz, please.

DR. BARBIERI: To Sean's point, or question, right, because it's an important one, the first term of reference in our scope of work is because, you know, similar to how we handle assessments -- For a benchmark assessment, it comes to the SSC, and now it's called a research assessment, but the former benchmark assessment would come before the SSC after a CIE review, and so updates, subsequent updates, the SSC could review directly, and so, here, the process was, because there was already an actual peer review conducted before by the statistical consultants, and methodologies that were approved, if there are differences in the methodology that are being proposed now, right, and those may be justifiable, this is fine, but this new methodology is going to have to be peer reviewed separately before the SSC can provide its final review.

CHAIRMAN NANCE: Sean.

DR. POWERS: Okay, and I don't want to -- I mean, apparently Trevor and Tiffanie agree that it isn't changing the value, and, I mean, I'm interested in why the statisticians wanted it done this way, as opposed to an average, but that's my own academic interest, and I will look into that.

CHAIRMAN NANCE: It sounded like that was -- Trevor.

MR. MONCRIEF: I mean, I'm trying not to be Mr. Simpleton over here, but peer review -- We're adding numbers together and dividing the other added numbers together, and, I mean, that -- What we're doing is fairly simple, and it's just the getting there, with the other parts, is fine, but, I mean, they come up with the same -- It's the same number, no matter how you do it, and so I think we'll be fine.

CHAIRMAN NANCE: David.

DR. CHAGARIS: So it shouldn't always be the same number. I mean, if that happened, that's just by chance, and the reason for taking the ratio of the sums, versus the mean of the ratios, is because it gives more weight towards years with higher landings, and so that has more influence on the ultimate ratio, and so, if you had one year that, you know, had a hundred pounds, and another year that had a thousand pounds, and you took the average of those two ratios, then it's treating each of those as having equal influence, and so I believe this is in some of the supporting documents that came around, but it is preferable to do the ratio of the sums.

CHAIRMAN NANCE: Yes, and that's the way I've always done mine, and, depending on how you do it, it comes with different answers, but that's good. Kevin, please.

MR. ANSON: I think the conversation is pretty well wrapped-up, but I will just add that I did not really follow the instructions well, apparently, and there is a slight difference, at least in the examples that I provided for Alabama. You know, we're talking to the thousandth's placeholder, which doesn't sound like a lot, but it could be a day's worth, or two days' worth, depending upon which day of the season it is of harvest, but, in my examples, the one that we preferred uses the ratio of the mean, which would be consistent with what was done in the first calibration, and it will be consistent to what Florida and Mississippi has offered today. Thank you.

CHAIRMAN NANCE: Kevin, thank you very much for that clarification. I appreciate it. Beverly, do you have that?

DR. BARBIERI: I would recommend, and I don't know how long this is going to take, and so we might want to move on.

CHAIRMAN NANCE: Sure. That's fine. From the standpoint of Florida though, looking at the TORs, are there any issues or concerns with what Florida has proposed for monitoring for red snapper? I don't see any opposition to that. We're not voting.

DR. POWERS: Did we make a decision on their -- I know we're not voting, but did we make a decision on the years, or we're fine with all years?

CHAIRMAN NANCE: Go ahead, Luiz.

DR. BARBIERI: I think that's a very good point that should be made, because I thought that the discussion here about what years to choose, and Dr. Crabtree made a few points about changes in the

fishery, and I thought that could be taken into account, right?

CHAIRMAN NANCE: Ryan.

MR. RINDONE: Thank you, Mr. Chair. These terms of reference were writing with the understanding that each state would have picked a preferred, and so, if it's being left up to the SSC to make that selection, then that would just be another thing that the SSC would need to make a recommendation about.

DR. BARBIERI: Not to sound like Mr. Simpson here, but this was never presented in any of the instructions, and it's not explicit in the letter, right, and none of the communications that we received from anybody, be it the agency or the council, ever provided instructions for us to pick one, and so we were deferring to the SSC. I mean, the letter was explicit about develop calibrations that use different data series, you know, and so the SSC has a number of options to pick from.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: I don't think it's a problem, in the grand scheme of things, and so it would just be another recommendation by the SSC to use this time block, or these specific years, and I think there's been -- There will have been enough discussion about it to serve as justification for the record, and so I'm not personally bothered by it.

CHAIRMAN NANCE: A recommendation of years, I think both seem to be justifiable. The longer timeframe that would be used, we've tacked on additional years, but the shorter timeframe is more consistent with what's happening now, and it is more relevant, and both of them have -- Both FES now and SRFS are being, you know, incomplete monitoring. Sean.

DR. POWERS: So I guess we will make -- I guess we'll make a motion that the SSC -- I don't know what we want to say. **The SSC recommends Florida's calibration with the years 2018, 2019, and 2021 as the base.**

CHAIRMAN NANCE: Carrie.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair, and so is that State Reef Fish Survey to CHTS, and is that in numbers of fish, or is that in pounds of fish, because I believe there was some type of combination that was used by Florida and Mississippi last time. No?

DR. BARBIERI: Just to clarify, our initial calibration, and this is how this gets complicated, but our initial calibration that was provided back in 2020 was from MRIP to FES, or FES to MRIP, right, and, here, for this review, we were instructed to do it to CHTS, specifically, because it is for quota monitoring, and we hadn't done that before, and so, to stay true to the first term of reference, we provided them to both, to FES and to CHTS, right, and the calibration ratios are provided in numbers and in weight and in pounds.

CHAIRMAN NANCE: Sean.

DR. POWERS: So let me edit that then. **The SSC recommends Florida's calibration from SRFS to CHTS with the years blah, blah, blah, and I think, as far as whether it's number of fish or pounds --**

MR. RINDONE: Jess, I'm going to read it out, because there's some other language that we should probably put in there for specificity. **The SSC recommends that Florida's calibration from SRFS to MRIP-CHTS, for the private angling component of red snapper, use data from 2018, 2019, and 2021 to determine the calibration ratio.** Sean, how does that taste?

CHAIRMAN NANCE: Sean, is there any issue with that?

DR. POWERS: **I'm fine.** I mean, it's got "calibration" in it twice, but I don't want to use the word "conversion" upfront, and so we will just live with that redundancy, but it needs a second.

CHAIRMAN NANCE: Andy, please.

MR. STRELCHECK: I'm not seconding, because I'm not on the SSC, but can we specify the exact value in the motion?

CHAIRMAN NANCE: As far as pounds or number?

MR. STRELCHECK: Whatever the ratio is, so it's crystal clear what you selected for the council's consideration.

DR. POWERS: I guess I would hold off on the number, just because of the outstanding request for 2020 right now, and whether we change this to include 2020, but -- Well, I mean, I guess we could put the specific ratio in.

MR. RINDONE: 1.29, and is that right?

MS. CROSS: In pounds, it would be 1.34.

MR. RINDONE: It's 1.29 in numbers of fish, and it's 1.34 in pounds whole weight.

CHAIRMAN NANCE: Paul.

DR. MICKLE: Thank you, Mr. Chair. **A suggested amendment is to add "updated calibration ratio", and so add "updated" prior to the word "calibration", the second "calibration".** I second.

CHAIRMAN NANCE: Second. Okay.

MR. RINDONE: Then add the word "of" after "ratio".

CHAIRMAN NANCE: We have a motion recommended by Dr. Powers, and Dr. Mickle had seconded that. I'm going to read it. **The SSC recommends Florida's calibration from SRFS to MRIP-CHTS for the private angling component of red snapper. Use the data from 2018, 2019, and 2021 to determine the updated calibration ratio of 1.29 in number of fish and 1.34 in pounds whole weight.** Paul.

DR. MICKLE: I am trying to be helpful, but not complicate, but the -- Should there be a justification -- I am looking out for the SSC here, and should there be a justification behind those years in the motion, so the perception and the delivery to the council is justified of why these years were selected as recommended by scientists from the State of Florida, and agreed upon by the SSC, or something like that, or can it be delivered into the summary to the council?

CHAIRMAN NANCE: I can deliver that in the summary, and I think I can do that. Then the motion doesn't become unwieldy.

DR. MICKLE: Yes. I like obvious things, but I get it.

MR. RINDONE: We have verbatim minutes that are recorded for the SSC, and so the record is quite detailed, as far as what leads to the decision.

DR. MICKLE: I just think of people grabbing reports and reading this and --

CHAIRMAN NANCE: I appreciate that comment, Paul, for sure. Harry.

MR. BLANCHET: Thank you, Mr. Chairman. Thinking in terms of what is the purpose of this, are we talking about using this calibration ratio for all years, or years going forward, or X years, until some other benchmark is achieved? What do we do about years that are already on the books? Are we recalibrating those?

CHAIRMAN NANCE: Remember, Harry, that this is for monitoring, and so past is past, and you're not going to monitor what happened in 2017 with this, and this is for monitoring future things.

MR. BLANCHET: Okay. That works for me. Thank you.

DR. POWERS: Because remember the research track assessment is looking at this question, on how to hindcast and reconstruct it.

CHAIRMAN NANCE: Yes, and this is not -- That's why I wanted to say this is for monitoring, and it has nothing to do, nothing, with hindcasting, with assessment stuff like that, and this is strictly for monitoring. Roy.

DR. CRABTREE: When the new assessment is done, the CHTS will be out of the picture, and it will be FES. Luiz, I am looking at the table in your report, and you have the various correlations in there, zero percent, 50 percent, and 90 percent, and, for this choice of years, you have the highest correlations of any of it, and is that something that is a concern, or does that -- Is that something that we need to take into account, or is that not? The highest PSEs.

DR. BARBIERI: Associated with the highest correlation? Well, I don't know if it is a concern. What I can tell you is that, when we first proposed the methodology, right, and FWC provided the first methodology, the last time around, and it was reviewed by the peer reviewers, the statistical consultants, and we actually had recommended a 50 percent correlation, right, because we know that APAIS, conducted under MRIP, is not completely independent from APAIS conducted for SRFS, and so we recommended 50 percent as a middle ground, in terms of the correlation, and the consultants felt that that was unnecessary and recommended, and this is in their review report, that we use the zero percent correlation.

DR. CRABTREE: Okay, and so that leaves with this particular ratio has a somewhat higher CV than the other ones, but not substantially higher.

CHAIRMAN NANCE: Dave, please.

DR. CHAGARIS: I just have a question, and so where would these ratio PSEs actually be used? How would they be used in the conversion process, or would they be used at all?

CHAIRMAN NANCE: Go ahead, Luiz.

DR. BARBIERI: They would not be used at all. I mean, it's simply to give you an idea of what the uncertainty associated with that central tendency measure is.

DR. CHAGARIS: That's what I thought, but I wasn't sure. Thank you.

CHAIRMAN NANCE: Let's go ahead, and I am going to read the motion here. **The SSC recommends Florida's calibration from SRFS to MRIP-CHTS for the private angling component of the red snapper. Use data from 2018, 2019, and 2021 to determine the updated calibration ratio of 1.29 in numbers of fish and 1.34 in pounds whole weight. Any opposition to that motion?**

DR. PATTERSON: I just have a point of order. We're still waiting on the 2020 estimate.

CHAIRMAN NANCE: Okay.

DR. POWERS: So it reads as better English, the SSC recommends Florida's calibration, and it's missing something there. Hold on. **Recommends that the Florida.**

CHAIRMAN NANCE: Will, thank you. Tiffanie, do we have that? Okay.

MS. CROSS: The ratio of the State Reef Fish Survey estimate to the CHTS estimate for 2020 was 2.1, and that 2020 estimate, for the CHTS, was very different than any of the other estimates in that time series, like really different.

CHAIRMAN NANCE: Will.

DR. PATTERSON: So, unless I'm missing something, looking at the 2021 estimate, it's 2.15, and so how is 2020 so much different than 2021? It's 2.15 for landings.

DR. BARBIERI: Are you looking at Table 2, Will, and the ratio in Table 2?

DR. PATTERSON: No, and I'm looking at -- I took the data from the PDF, and I put it in Excel, to do the individual years, to see what they looked like, and, unless I did some -- I mean, my means line up with what's been produced here, and so, if you go back up to an earlier page, here, in 2021, the SRFS is 347, and the CHTS, is 161 and so --

CHAIRMAN NANCE: You're looking at Table 1, I think, Will.

DR. PATTERSON: So 347 divided by 161 --

MS. CROSS: I was referring to if you're looking at just the CHTS time series that was provided by SERO, and that particular estimate for that year really sticks out as very different, but I haven't calculated the individual years, to look at those differences.

MS. SAULS: Can you tell us what that estimate is for 2020, the CHTS number?

MS. CROSS: Yes. The 2020 CHTS is 714,993, and the State Reef Fish Survey estimate, for the same year, is 1,512,387.

CHAIRMAN NANCE: Will.

DR. PATTERSON: So they're both high, but, relative to one another, they're no different than the next year.

MS. CROSS: Right, and I think that that's probably because of the approximations that were used to calculate that year. They used, I think, the three prior years, and Dr. Cody can speak to that.

CHAIRMAN NANCE: Richard, please.

DR. CODY: What Tiffanie is referring to is the imputation method that we use, and I don't think, and I will just go back and check how much of the imputation data, from the previous two years, was used, but I don't think it was a very large amount, if any, for red snapper, and so there may not be a big impact from imputation in 2020, relative to 2021.

There are some concerns about Florida's sampling, their ability to sample certain sites in different regions, but, you know, looking at what I provided the council some time ago, relative to the number of assignments that were completed and so on, where there might be issues is in the amount of biological information, such as lengths and weights, that would have been available, and I can check on that.

CHAIRMAN NANCE: For red snapper, it doesn't seem to be -- I mean, it's certainly in the ballpark of the others, in a way. Luiz.

DR. BARBIERI: So, Will, to that point, I mean, if you feel that 2020 should be included -- I mean, I don't think we are opposed to that. I mean thing is, because of COVID, and because of changes in the survey that year that are documented, the fact that the imputation took place in 2020, and the fact that there were, you

know, counties, and municipalities, that were closing boat ramps, and so there was a difference in 2020 that we felt -- You know, the same way that we have been treating assessments in 2010 fairly differently, because of the oil spill, right, and not necessarily considering those years.

CHAIRMAN NANCE: What you're saying is, while the end product is within the range, how that product was derived is very different than in all the other years.

DR. BARBIERI: So, if I were before the council, and I were to explain why 2020 was a year that's comparable to any of the other years in the time series, I wouldn't be able to come up with something credible, right, and I'm not opposed to including 2020, if there is a strong justification to do so, but I wouldn't explain -- You know, if we're trying to include data that are comparable to each other, in ratios between two surveys, I think that's the one that we would remove, but, you know, I don't feel strongly about it if a good justification for including it can be provided.

CHAIRMAN NANCE: Will.

DR. PATTERSON: I am not trying to make an argument to have it in or have it out at this stage, but I was just curious what it looked like, and, as far as the ratio, Luiz, it's actually less different than the year after, and it's just that both the estimates from SRFS and CHTS are big in that year.

Now, is that a sampling issue, or is that actually how the fishery operated that year? If this were, you know, the SEDAR estimates, the FES estimate for landings, in 2020, is going to be used, right, and we wouldn't throw out that data point just because it was high.

The fact that they're high for both, and it's not outside the range of ratios for the other years, gives me pause as to the rationale of why we would throw it out. I don't think we have to put rationale in here for throwing it out. I mean, for including it, and I think we have to put a rationale for why we excluded it.

DR. BARBIERI: Right, and I don't disagree, Will. I don't disagree. I just -- Like I said, if I were asked about why that year was removed, and we actually received reviewer comments from the Science Center and SERO, and I think it was the Science Center review that said, well, Florida did not include 2020, and this should be in the documentation, right, the background, and it is, and the Science Center said, well, yes, we do not think the 2020 here -- If there is one year that's going to be removed, that should be it, but we don't really feel strongly enough about it.

I'm just trying to think about, you know, real, justifiable criteria for including it, and I think we have enough to remove it, especially if it doesn't make much of a difference.

CHAIRMAN NANCE: David, please.

DR. GRIFFITH: Thank you, Mr. Chair. I personally think you have a very strong argument for excluding it, but not a very strong argument for including it. I mean, if you -- If they couldn't intercept people during that year, I mean, the whole wave that they sampled in that year was wrong, and so what Jim said is right.

Just because you happened to come up with similar numbers at the end, the whole wave that you derived those numbers was completely different, and so it's like a whole different survey taking place during that period, and so I would -- I think you have a strong case to exclude it.

CHAIRMAN NANCE: Roy, please.

DR. CRABTREE: I think the rationale is there to exclude it. I think the tricky part, with this, is explaining why, with Alabama and Mississippi, it's not -- It is included there, and I think we've got to be able to make sure that we explain why we made a different decision.

CHAIRMAN NANCE: I think, for some of them, it's because of the waves, and I think Alabama said that, by the time they started sampling again, it was later in that year, where Florida samples the whole year, and Alabama is part of the year, and, by the time they started sampling, then they were able to go out and fully sample, but it's very different than I think what Florida was indicating for 2020. Sean.

DR. POWERS: A lot of it has to do with how serious our state governments took the pandemic, actually, and the directions from the governor's office, and Alabama did survey their normal way, but I agree with you, Roy, and that's my only hesitation, is that it would be nice to have consistency, at least in the base years, but, on the flip side, if the state managers don't feel that that's a representative year, then it should be excluded.

CHAIRMAN NANCE: Will.

DR. PATTERSON: So maybe a way to move forward then is to include the numbers in the table, and then talk about why that wasn't included in the estimate of the ratio, because the data do exist,

but you're saying we don't have -- The veracity of them is questioned, for these reasons, but you still present them.

CHAIRMAN NANCE: I think that's a good point. We can put it in the table, so we have that value. Paul.

DR. MICKLE: I think David probably said it the best. You know, the methods were compromised, right, in 2021, with Florida, but, in the other states, it wasn't, and so there needs to be some understanding there, and I can't explain how complicated it is to run the logistics of a landings program, and it's really hard to do, just the personnel and everything working through there.

It's mindboggling, and so, when you think about -- When a scientist from a state says it should be excluded, there's a lot of thought behind that, of why it shouldn't be there, and, if we include that in here, that's great, and I would say we probably need to put something in there, in the report or something, of the justifications, but, yes, we shouldn't be looking at the numbers, and we should be looking at the methods alone.

You know, if you're a terrible cook, and everyone is trying to make a great meal, and that could make you a good cook, but we don't want to go that route, right, and so it's about the methods of it.

CHAIRMAN NANCE: I am going to go forth with this motion, as-is, and so the motion, as it states, is the SSC recommends that the proposed Florida calibration from SRFS to MRIP-CHTS for the private angling component of the red snapper use data from 2018, 2019, and 2021 to determine the updated calibration ratio of 1.29 in numbers of fish and 1.34 in pounds of whole weight. Is there any opposition for this motion? Dr. Barbieri is -- Go ahead.

DR. BARBIERI: I just want to state, for the record, that I am abstaining from this vote.

CHAIRMAN NANCE: Yes. Will.

DR. PATTERSON: I abstain as well.

CHAIRMAN NANCE: Okay. Two abstentions. **Any opposition? Seeing none, the motion carries with two abstentions.** We will now move on to Alabama.

MR. RINDONE: Mr. Chair, before we do that, I think, at least verbally, acknowledging the terms of reference for Florida.

CHAIRMAN NANCE: Go ahead.

MR. RINDONE: I mean, I think a lot of the discussion covers it, but, just to be succinct about it, the proposed -- Is this proposed revised calibration ratio for Florida not dissimilar from what was approved in 2020, and I think the SSC would agree that yes, and I'm seeing lots of heads nodding in the affirmative.

CHAIRMAN NANCE: Yes, could you put Florida up, instead of Alabama? Thank you.

MR. RINDONE: The SSC, I think, has discussed, pretty thoroughly, its justification for the years and the waves recommended, because the SSC is the one recommending the specific years, and so, I guess, finally, are there any additional clarifications necessary for considering the proposed revised calibration ratio?

CHAIRMAN NANCE: No.

MR. RINDONE: Seeing no mutinous comments, okay.

CHAIRMAN NANCE: Okay. Perfect.

MR. BLANCHET: Mr. Chairman, I did have a question about that last term of reference.

CHAIRMAN NANCE: Go ahead, please.

MR. BLANCHET: If you look at the individual annual ratios, and I think it was Will that mentioned this, both 2020 and 2021 have fairly different ratios than the other years did, and is there any reason for that change in the ratios? If we're looking at the calibrations to FES, it's pretty similar, but, for the CHTS, it's quite different, and so -- You know, it's on the order of two, instead of on the order of one, as a ratio, and so is there any -- We haven't really talked about why that would be that much different than the rest of the historic trend.

CHAIRMAN NANCE: Luiz.

DR. BARBIERI: Harry, thank you for that question, and I think I would defer to NOAA Fisheries, right, to talk about the calibration between FES and CHTS, right, and, I mean, I think that what happened, for this last couple of years, is that we are using an MRIP to FES, which is the only running survey right now, and having to convert those estimates to CHTS, and so I can't really explain why, over time, those differences exist, Harry, but I just know that the model-based approach of calibration, that was approved

for MRIP, takes into account, right, changes between the two surveys over time, and so it's not supposed to be a linear --

You know, completely comparable across the time series, because, like Richard mentioned earlier, the use of cellphones, and other factors, that influenced the values on CHTS obviously are going to impact the calibration with FES. Richard, did I capture that okay?

CHAIRMAN NANCE: Richard.

DR. CODY: I think Luiz did a pretty good job of explaining how the calibration works, but, essentially, you know, the model, in the latter years, and I mentioned this earlier on, does account for increasing cellphone use and decreasing response rates in the Coastal Household Telephone Survey, which relied on landlines.

That population was -- Well, it had become -- We could say less representative of the fishers, in general, and it tended to be older, and it tended to have some correlations with health issues and what have you, and so it wasn't really representative of the demographic for the actual sample to begin with.

We know how the model, the calibration model, behaved through the benchmarking period, and then going back in time for the generated FES-based estimated, but, going forward, we would expect, you know, some of that relationship to continue, and we would expect a continued deterioration of the CHTS response rates, and we don't know, explicitly, how the model will behave over time, as you get further and further away from the benchmarking period, and so we could be seeing, you know, some of the effects of the model here, but, you know, that would take some research, I think, to ferret out.

CHAIRMAN NANCE: Thank you. Harry, does that address your concerns?

MR. BLANCHET: I believe that it does, to a degree, because the ratio of the SRFS to the FES is within the range of the historic ratios, but, if we're talking about using this essentially a surrogate for the CHTS, I think we need to have some caveats with that, and that's where I was going, and I'm just trying to check the boxes. Thank you.

CHAIRMAN NANCE: Absolutely. Thank you so very much. Okay. We'll go ahead and move to Alabama, and we'll go through these. In my opinion, the proposed revised calibration ratio that Alabama is proposing is similar to what was used in the past, and so I would put a yes there. Is there any disagreement with that? It's the

same methodology, and there is some recommendations in the proposal for changes in years, and I don't think there was any changes in waves, but changes in years, and, Kevin, it was -- Just so I'm thinking correctly here, but it was -- Tell me what it was.

MR. ANSON: As far as a recommended?

CHAIRMAN NANCE: It was 2018 and 2019, and is that correct?

MR. ANSON: That's correct. Yes, it was .

CHAIRMAN NANCE: You're proposing to use --

MR. ANSON: We're proposing to use the years 2020 and 2021, exclusively, and so we would replace 2018 and 2019 with 2020 and 2021, is what we recommend.

CHAIRMAN NANCE: Okay. Do we feel like there is justification then -- Basically, we're changing the years from 2018 and 2019 to 2020 and 2021, and, from what Kevin was saying, it looked like they were moving into basically a more recent period, and they're not using the older data, and they're moving into a more recent period. It seemed like they provided that justification for that. Is that enough justification for moving there? David, please.

DR. GRIFFITH: Thank you, Mr. Chair. It's in the PowerPoint presentation, and it says that 2020 and 2021 data are more similar than 2018 and 2019, and is that similar to one another, and I don't know how -- Is that their justification?

MR. ANSON: Can I answer, Dr. Nance?

CHAIRMAN NANCE: Kevin, yes, please. Thank you.

MR. ANSON: Yes, and they're more similar to one another, as far as the relationship of the estimates that were produced and the relationship of the anglers that were encountered in the field, and so just, again, the notion of smaller seasons, shorter season duration, has an impact on those estimates, and that the fishery, with an extended season -- The behavior of the anglers has changed, and it's of a different state now than it was in 2018 and 2019.

CHAIRMAN NANCE: So, Kevin, in 2020 and 2021, those years are similar, but different than 2018 and 2019, which you saw a different number of anglers and things like that. Is that correct?

MR. ANSON: Yes. As far as the daily trips and those types of things, yes. Now, I understand that, when you look at trend lines,

there is ups and downs, and so, you know, one could make the argument that the variability, either as pairs of years for the first two years and the second two years, or just looking at the four-year time series, that there is variability in there that one could expect with the type of data that we deal with, but that was a recommendation that we have made.

CHAIRMAN NANCE: Thank you. Any other questions about TOR Number 2? Roy.

DR. CRABTREE: I guess I don't object to it, but I haven't found the rationale all that compelling in it, and it's not that clear, to me, to look at, and I don't know how much of a difference it made in the estimates, off the top of my head, but I find that the most troubling part of this one.

CHAIRMAN NANCE: Roy, if you look at the options in the back of the presentation, I think Proposed Calibration Option 1 goes -- The ratio of 2018 and 2019 was 0.49. Using 2018 to 2021 is 1.53, and -- It's 0.53. Thank you. Then, if you removed 2020, and so 2018 through 2021, it was, again, 0.53, and so exactly the same if you removed 2020 from that, and so you're basically -- No matter if you had 2020 in there or 2020 out, it was the same ratio.

DR. CRABTREE: I mean, the ratio seems higher for 2020 and 2021 than it was for 2018 and 2019, and I guess I'm just struggling with the thing about 2020 and 2021 being more similar than 2018 and 2019, and that's not all that clear to me exactly what that means, or necessarily that that's a good reason to exclude it, and it does seem to make some difference, although I don't think it's that large of a difference.

Now, I think the rationale for including 2020 was that their surveys took place with COVID, and the timing of the year was such that that wasn't a problem, and so I think that's solid, and I'm okay with that, and I'm not necessarily objecting to excluding 2018 and 2019, but I just don't think the rationale has been all that compelling for it, but I don't know where other people are on it.

CHAIRMAN NANCE: What would -- David.

DR. GRIFFITH: Thank you. I think that Kevin made a few points, and maybe he could go over them again, or put them in the document, that mentioned why he -- They're similar, actually, to why we excluded 2020 for Florida, because a lot of the stuff going on during 2018 and 2019, in terms of the number of days they could fish, the number of anglers, a whole bunch of different things

were going on that made it considerably different than 2020 and 2021, or at least that's what I got from what Kevin just said a minute ago, but maybe Kevin could be more explicit about that. Thanks.

CHAIRMAN NANCE: Kevin.

MR. ANSON: That's essentially the point that I was trying to make earlier today, you know, looking back at the proportion, again, of those anglers that are, you know, being interviewed, versus those that were going through the sites when the assignments were completed, is that there was a disparity in the proportion of anglers that were being collected, or interviewed, in Baldwin County, at higher rates than what was being observed to be going through the sites during the assignments in Mobile County.

You know, I just will mention what Dr. Cody had said, is that, yes, these are unweighted counts, intercepts, and so there are some issues there, potentially, but it's just -- It was just to provide some additional information to help describe why there may be some disparity between the two survey estimates and that, you know, as the fishing season increased, the per-day angler trips kind of -- They were reduced, and that some of those effects related to the sampling design and how anglers are counted and then apportioned to the effort from the Coastal Household Telephone Survey, the mail survey, and how those are apportioned could change as well, and, again, the shorter the season, there seems to be a higher chance that the estimates diverge from one another and are not -- If you deem the Snapper Check estimates to be more accurate, then they're less accurate for CHTS, is all.

CHAIRMAN NANCE: Thank you, Kevin. Richard, please.

DR. CODY: I will just follow-up on Kevin's points, and we did see, once the numbers were weighted, that there was a shift towards Mobile County from Baldwin County, and so it's more towards that end of the distribution, but, in looking at residency status, the weighted and the unweighted numbers were pretty similar, and so there's a little bit of a conflict there.

CHAIRMAN NANCE: Okay. Thank you. Roy.

DR. CRABTREE: I guess -- So, when I hear about a shift from Baldwin County to Mobile County -- I mean, we also heard some discussion, and I think Sean might have -- That a lot of those inshore reefs off of Orange Beach, and in Baldwin County, are being fished pretty hard, and the abundance is down, and so could more of the effort shift to Mobile County, because the fishing is better

down there?

If that's the case, I'm not sure that's really any rationale for including, or excluding, years, because I don't know what the future is going to bring, and so I guess I'm still -- Kevin, does it trouble you to have this based on only two years, at this point, and is the value of eliminating those years' worth the tradeoff of going down to a much shorter time series? That all troubles me.

MR. ANSON: I will be a Dr. Barbieri and say that I understand the value of having the additional years for the point of reference. You know, I don't know about if it troubles or not. I mean, we're still going to be able to monitor the harvest, and I feel like we will be, you know, good at maintaining the season length, such that the estimates are close to whatever the ACL that we have -- We'll be able to stay within, or very close, to that.

CHAIRMAN NANCE: Okay. Thank you. Ryan.

MR. RINDONE: Just a point of clarification here. For Sub-Option 1a, under the Snapper Check column, the mean landings there should be 1.027 million pounds, and, under MRIP-CHTS, it should be 1.874 million pounds, and the ratio should be 0.548, and so excluding 2020 has a negligible effect, but not no effect, and so it looks like there's a copy-and-paste thing between Sub-Options 1a and 1c.

CHAIRMAN NANCE: Perfect. Thank you for finding that. Paul.

MR. ANSON: Thank you, Ryan.

DR. MICKLE: Thank you, Mr. Chair. Real quick, I think it might be safer, and I agree with what Roy said, and it might be safer just to look at the ratios and allow the -- Looking upstream, you have the ratio, and you look and try to understand why they're different, but, when you're justifying which years to use, it should fall only, in my opinion, on how the surveys are executed in those annual cycles.

If something interrupts, or impacts, the methodologies of the survey, in my opinion, that's the strongest justification that you can have. From a scientific perspective, looking at ratios, and then looking back and seeing which one is closer to the other one, it leads down certain roads that aren't scientific, potentially, but, again, it's important to do, and I'm glad we're all doing it, because it helps us understand why they're different from each other, and I'm talking about justification from the sole perspective of methodologies.

Florida justified it on interruption from COVID and intercepts, right, and things like that, but I think it makes our job a lot easier, and cleaner, if we justify things on methodologies of the execution of the surveys, of why something should be in or why something should be out. Thank you.

CHAIRMAN NANCE: Thank you very much. Will.

DR. PATTERSON: That's the same point I was going to make. Thanks.

CHAIRMAN NANCE: Perfect. Thank you so much. Dave.

DR. CHAGARIS: Thank you, and so we're kind of, you know, stuck in these difficult decisions of trying to decide which years, or waves, to keep or drop, and one alternative would be to just downweight them, and so, here, we have -- We're using ratios based off of averages, and if we have uncertainties associated with those years that there is issues about, and I believe it would be easier for us to quantify that uncertainty than it would be to make a decision to keep it or drop it, then it could be downweighted into both the numerator and the denominator. If you have a higher CV, the inverse of the CV --

DR. MONCRIEF: In the past report, it said the consultants reviewed it, and I think it was the surveys operated so functionally different that you couldn't weight them by PSEs, or the uncertainties, and so it was attempted in 2020, and it fell flat on its face.

DR. CHAGARIS: Okay. I mean, I would argue that the uncertainties wouldn't have to be consistent among the surveys, but, as long as they're within the surveys, then you could do the weighting, but it sounds like these arguments have been had already. Thank you.

CHAIRMAN NANCE: Thank you. Roy.

DR. CRABTREE: So, Kevin, the current calibrations that have been put in place for this year -- I think Alabama's is 0.4875, right, and so, with those in place, the state quota, for Alabama, is going down by about 50 percent, right?

MR. ANSON: That's my understanding.

DR. CRABTREE: Right, and so you're looking at a significant change in the fishery this season that's going to cause it to be less similar to the last two seasons, and that's some of my reticence about using that as a criteria, because we're already changing the fishery, and anglers perceptions about season lengths are going to

change already now, and they may in fact change in ways that are more similar to 2018 or 2019, and I have no idea, but I think it's just important to realize that season lengths, and all those things, can change, and we shouldn't overweight that kind of thing, to me.

CHAIRMAN NANCE: Okay. It appears, in the discussion, that, while there are differences in 2018 and 2019 against 2020 and 2021, and as far as anglers, there is no information, that I have seen, as far as changes in the methodology of sampling. Is that an accurate statement? Kevin, would you -- Is that accurate?

MR. ANSON: I'm sorry. Can you repeat that, please?

CHAIRMAN NANCE: I was just saying that, while 2018 and 2019, against 2020 and 2021, we've seen changes in angler -- Where they're fishing from, and number of days and things like that, but, as far as the sampling methodology that's being used to collect the data, there's not really been a change in that, and would that be fair to say?

MR. ANSON: Yes. I would think that would be fair to say, yes.

CHAIRMAN NANCE: Okay. With that, do we have, from the SSC standpoint, a justification for -- Basically, we're moving from 2018 and 2019 to use 2018 through 2021 as the base years, with the knowledge that methodology has not changed. We have seen changes in the fishery, how the fishery is prosecuted, but not changes in how the sampling methodology has occurred. Sean.

DR. POWERS: I would agree, and I don't see anything in the sampling methodology. I think what Kevin was arguing was that he didn't think that 2018 and representative, on the interviews, and so there is something, because of the counting, and so there is that. There is also, and it's more of a question for Kevin, and, you know, we heard Mississippi, and we'll talk about Mississippi in a second, essentially has this same kind of dilemma, that they really didn't like two years of data, or didn't think it was representative, or thought it was overestimating the catch.

Their compromise was to use one of those years, and so even though they didn't seem to trust either year, and is there a reason for you to believe that 2018 or 2019 are overestimating? I think you saw Trevor's presentation on how he showed to us that it was -- That there was just some gross impossibilities with those numbers, and so, I mean, what's your feel for the magnitude of 2018 and 2019 and that estimate?

MR. ANSON: I mean, I think the estimates, you know, are -- They somewhat reflect the trend, if you will, as far as, if you're just looking at trips, there might be a little bit more in 2019 than there was in 2018, if that's in fact, you know, what went on, and Dr. Barbieri mentioned earlier that there's some other -- You know, it's not necessarily effort that might be causing these changes, and it's catches and such, and catch rates, in pounds of fish, but, you know, as far as an individual year of those two, you know, they were -- There's a little bit more days in 2019, and, you know, there was a little bit more fish.

I mean, we were still coming out of the residuals, I think, of those very restrictive years, in 2014, 2015, and 2016, whereby, you know, the stock, I think, had built up everywhere, whether it was well offshore or close to shore, and then those fish essentially, because we were allowing more harvest, under the 2018 and 2019 period, those fish were caught.

You know, we're in a situation now where those fish are not as available, and so, you know, as Dr. Crabtree mentioned, that could change, going forward, but, again, inasmuch as, you know, trying to get to a point where we have an opportunity to increase the amount of ACL we have available, based on an adjustment to the current calibration, it would just, I think, lend itself to having more fish available to have a longer season, is all, and those effects of compressing that effort and how then that is translated into an estimate for both surveys is mitigated somewhat.

CHAIRMAN NANCE: Thank you, Kevin. We have -- I guess what's on the table is either a four-year and a two-year, and do we want to ask for, as TOR Number 3 specifies -- Would we want to see additional clarification for considering the state's proposal, and maybe give us some rationale, more rationale, on why we're moving to just the last two years, as opposed to all four years? Roy.

DR. CRABTREE: Well, just, to me, personally, I don't think we have enough rationale to not use the four years, at this point. I think we can say that, if the state can provide stronger rationale for that, okay, but I just haven't heard it yet, and that's just me.

CHAIRMAN NANCE: David.

DR. GRIFFITH: Thank you. I was under the impression that 2018 and 2019 -- That the number of days in the season were much shorter than 2020 and 2021, and is that true, Kevin, and did that cause difficulties in sampling, and is that the kind of rationale that you're looking for? I got that from your earlier statements, but

I might be wrong there.

MR. ANSON: It's Slide Number 6 that provides the number of days, and so those are the total number of days, when you include state season days for those years, 2014 through 2017, that were available, and so, in 2018, for the time series we're looking at, that was the shortest amount of time, and I believe it was twenty-eight days for that particular year, and then it was thirty-four, or thirty-five, days in 2019, and it was forty-three, I believe, in 2020. Again, when I mention days, it's the days the season was open, and so the Friday through Sunday, or the Friday or through Monday, depending upon the years you're looking at.

Then in 2021 is when we had 121 days, I believe, and so, to the extent that, again, the shorter seasons cause, you know, everybody to go fishing in more limited time periods, it does create some problems, and inefficiencies, on the face of it, for how samples are collected and whether or not those samples are, you know, representative of all of the trips that are being made, as well as whether or not the trips are representative of the anglers and their location, their residence, when you consider the adjustments that are made to CHTS on the number of trips.

CHAIRMAN NANCE: Thank you. Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Kevin, following-up on that point, I mean, I'm looking at that graph now, right, and, sure, we eliminated previous years that have, you know, clear differences in the fisheries, but, if we're looking from 2018 forward, you have the EFP and regional management in place, and, if the idea here is to look at the relationship between the two surveys, and the seasons, right, in Alabama were sampled by both surveys in all those four years, why would one survey be impacted more than another? I think that might be one issue for us to think about, because, if that relationship between the two surveys is changing, it's not accounted for in a simple ratio, right, and so that would be my question.

MR. ANSON: I don't -- Other than what I provided here today, I don't have any additional information, obviously, and it is a question that has been brought up, I think at least with Trevor's presentation, you know, that deserves additional attention. If you look further at Slide Number 9, you know, at not just the days, they're getting close to one, you know, and so it does -- You know, I think it does deserve merit, or it has merit, to look into the issue further and find out and really drill-down to some of these -- You know, some of these factors that go into harvest estimates, you know, and see where there might be some differences, or see

where there might be some things that could be causing a greater difference between the two surveys.

CHAIRMAN NANCE: Thank you.

DR. CRABTREE: I appreciate that, Kevin, and, if you back up to the previous slide, I mean, there's clearly things that are going on in the fishery in Alabama, and, if you're looking at just similar years and things like -- Well, I don't know what happened to the previous slide.

In a lot of respects, the anomalous year is 2021, where there has clearly been a real change in catch rates, and much higher days, and so, you know, if I was just looking at this last slide, if I was looking at what years are more similar, I would say, wait a minute, 2021 seems to be the --

CHAIRMAN NANCE: The outlier.

DR. CRABTREE: The outlier, and so that's the complicated nature of all of this.

CHAIRMAN NANCE: Will, please.

DR. PATTERSON: Pass.

CHAIRMAN NANCE: Jason.

MR. ADRIANCE: Thank you, Mr. Chair. Kevin, you were talking about shorter days, leading to different, I guess, ability to interview, and, for that 2018 season, were those days announced ahead of time, or just the season structure is so -- I guess my question is was there any reason for anglers to perceive a shorter season from the get-go?

MR. ANSON: My recollection is that we did not announce a prospective season, and I know we ended up closing -- At the very least, we ended up closing quicker than we thought we would, but I think, you know, in that first year, first couple of years, under the EFP, you know, anglers were in the mode of nine or ten or three, and then a second season of thirty-nine days, and so they were, I think, still in the mode of we need to go fishing, you know, when the season opens, to make sure that we have a chance to go, or it could be closed, and so that mentality, and desire, I think, has gone away, to some degree, based on the increase in the season length. Certainly there is issues with the ability to catch fish, you know, with the localized depletion concept, but that, I think, was still on everyone's minds in 2018, and we still had,

you know, a short year.

CHAIRMAN NANCE: Thank you. Steven.

DR. SCYPHERS: Just first a comment on 2021, and I'm not sure this is an additional, you know, factor, but the report does mention 2021 being a year when people shifted how they vacationed. Things opened back up, and, where there was a lot of fishing the year before, people started doing other types of recreational activities again, and that definitely matches some survey work that we've done.

Another layer of that, that we've heard in surveys, is, while gas prices really kind became the hot topic of 2022, 2021 was also a pretty significant increase, and they went up about 50 percent, I think, in 2021, and so that had an influence on fishing then, too.

In terms of, you know, my thought on the years, when you look at the four-year ratio, the conversations about the more recent aspects, I mean, there's a trend going on there, and it's increasing. You know, they're converging, is what the report calls it, but that ratio is increasing, and so, you know, if we're looking forward, to me, that says the most recent years probably tell us the most about that, if that trend continues, and they mention that the trend might not continue, but, yes, that's just my thoughts.

CHAIRMAN NANCE: Thank you. Will.

DR. PATTERSON: Getting back to Roy's point though, I mean, all this about what could be driving this, and how it could be working out, and gas prices, and vacations and everything, I mean, it's all speculative, and what we know is there's a difference among the years, and there's a difference in the ratio, but we don't really have any data to evaluate process or cause, and so I don't really understand -- You know, again, I'm just repeating what Roy said earlier, and I don't understand how the SSC would pick, within this range of years, any particular subset, given we don't have information to really dive into that.

CHAIRMAN NANCE: If I were picking years, by both of these graphs, I would pick the four blue ones, and that's the last four years, and then the next one, the chart down below, or two down, you look at the purple and the aqua, and the 2018 and 2019 and 2020 and 2021 are all similar, and so that pushes me towards 2018 through 2021 would be the four years that I would use for the ratio calculation.

Now, that's what I would recommend. Now, if Alabama has -- If they can provide some additional justification of why they would use just 2020 and 2021 over that four-year period, I think we could then look at that in a more different realm. Right now, I'm seeing that those last four years are very similar, in what I'm seeing on the graphs. Luiz, please.

DR. BARBIERI: I agree, Mr. Chairman, and then another point is, if we go back, Jessica, to the last slide, even though 2020 is very different there, in terms of the length of the season -- Because both surveys were being --

CHAIRMAN NANCE: 2021.

DR. BARBIERI: 2021. I'm sorry. Did I say something different?

CHAIRMAN NANCE: You said 2020, but we knew what you meant.

DR. BARBIERI: Sorry. A senior moment there, yes, but 2021. If both surveys are being conducted, in Alabama, over that length of season, right, and we are looking at the relationship between the two surveys -- I mean, it's not one survey being conducted for longer than the other, and I don't know why the ratio would be different here, right, and it could be -- If it has to do with how the length of the season would be impacting each one of the surveys differently, and so that relationship between the two could be different, but I don't know that, and, considering that, during these four years, both surveys are being conducted in Alabama, to me, that would justify us using those four years, and I don't see a reason to use anything different.

CHAIRMAN NANCE: Yes. Do we have a motion for that recommendation?

DR. BARBIERI: Well, I will make a motion, Mr. Chairman.

CHAIRMAN NANCE: Okay.

DR. BARBIERI: If Jessica would be so kind as to copy-and-paste the previous one, and you know me, and I prefer to go the lazy way. **The proposed Alabama calibration from Snapper Check to MRIP-CHTS for the private -- Actually, for the private and state charter, right, angling component of red snapper using data from 2018, 2019, 2020, and 2021 to determine the updated calibration ratio of 0.5579.**

CHAIRMAN NANCE: Is that in numbers?

DR. BARBIERI: Kevin, I don't know, and is that in numbers or in

pounds?

MR. ANSON: That is in pounds, the same unit that we used for the original calibration.

DR. BARBIERI: All right, and so, Jessica, if you could just delete the "in numbers" and the second number, and just say that --

CHAIRMAN NANCE: Then cut it out until "in". Perfect.

DR. BARBIERI: Thank you, Jessica. **In pounds whole weight.** I think we are there, Mr. Chairman.

CHAIRMAN NANCE: Do we have a second for that motion? David will second that. Harry.

MR. BLANCHET: Thank you, Mr. Chairman. For clarification, you were talking about consistent data, or very close correlation, on the graph that had the aqua and purple columns, or purple bars, and the measure that we should be looking at, in terms of consistency, those two are basically demonstrating that the Snapper Check is shutting down the season when they reach their ACL, and we really need to be comparing that aqua bar to the CHTS pink bar, and you can see, over that time period, there is significant change, in those ratios, between that pink and that aqua. I'm calling it pink, and whatever that color is.

CHAIRMAN NANCE: Is it the orange one?

MR. BLANCHET: Okay. We'll call it orange. Me and colors don't get along, and so I just think that some of the discussion was talking about --

CHAIRMAN NANCE: I see that, yes. Well, there is some change there.

MR. BLANCHET: Sorry?

CHAIRMAN NANCE: Go ahead. I'm sorry. Go ahead, Harry.

MR. BLANCHET: I am just saying that the relationship between those values is not as close as the relationship between the Snapper Check value and the ACL, and that's all.

CHAIRMAN NANCE: Absolutely. I agree totally with that.

DR. CRABTREE: In that figure we're looking at, the CHTS landings are coming down, but I pulled up the -- Of course, these are FES,

I guess, but I pulled up the Alabama red snapper landings, and, if you look at 2022, it jumps back up quite a bit, and so that declining trend of catches in the federal survey doesn't persist, it doesn't look like, and it goes back up, and I don't know what that means, but --

CHAIRMAN NANCE: Yes. Thank you. Ryan.

MR. RINDONE: Thank you, Mr. Chair. Dr. Crabtree, for using 2018 to 2021, to have things stay in keeping with what's being proposed for other states, and what was used in 2020, that would mean using the mean of harvest from 2018 to 2021, which we had recalculated to be 0.548 and not 0.5579, and so 0.5579 represents the mean of the annual ratios for 2018 to 2021, and 0.548 was the corrected value for the mean -- The ratio of the mean harvest from 2018 to 2021.

DR. BARBIERI: So that's not the --

MR. RINDONE: No, it's not, and so the value that is specified in the motion should be 0.548.

DR. BARBIERI: Thank you for that, Ryan and Lisa, because those things are easier corrected right now.

CHAIRMAN NANCE: That's good. Thank you, Lisa.

DR. BARBIERI: Then, Mr. Chairman, apparently the English there is not quite correct.

CHAIRMAN NANCE: It's in Portuguese.

DR. BARBIERI: That would be a lot easier, but so I'm being told that I should remove the "from".

DR. POWERS: I am just trying to figure out what is the numerator and what is the denominator.

DR. BARBIERI: What we're calculating is -- Right now, the data that's being collected in Snapper Check is to be converted to MRIP-CHTS.

DR. POWERS: This reads that, if you had one pound of snapper, in Snapper Check, you would have 0.548 pounds in MRIP.

CHAIRMAN NANCE: The other way.

DR. POWERS: That's what I'm saying, is it should be the other

way.

DR. BARBIERI: Yes.

MR. MONCRIEF: I mean, I think it goes either way, because what you're doing is applying it to the current --

DR. BARBIERI: That's what I'm saying.

CHAIRMAN NANCE: I will read the motion. **The SSC recommends that the proposed Alabama calibration from Snapper Check to MRIP-CHTS for the private and state charter angling component of red snapper use data from 2018, 2019, 2020, and 2021 to determine the updated calibration ratio of 0.548 in pounds whole weight. Is there any opposition to this motion, or abstentions?** Jim.

DR. TOLAN: I abstain, Mr. Chairman.

CHAIRMAN NANCE: Okay. Will.

DR. PATTERSON: I abstain.

CHAIRMAN NANCE: Okay. Harry, abstaining or rejecting?

MR. BLANCHET: I am confused. If we take the Snapper Check number and multiply that 0.548, we end up with a lower value, and all of the MRIP values are higher.

MR. RINDONE: Harry, it's you take the MRIP-CHTS value and multiply it by 0.548, and that's what Alabama manages to, using their data currency.

CHAIRMAN NANCE: Will.

DR. PATTERSON: An easy way to fix this is just to put, in parentheses, "Snapper Check estimate divided by MRIP".

CHAIRMAN NANCE: So calibration from -- Just put, instead of "to", just put "divided by".

DR. PATTERSON: No, and you can leave that language there, but, just after "CHTS", put, in parentheses, "Snapper Check estimate divided by MRIP-CHTS".

CHAIRMAN NANCE: Okay. Harry, does that help you?

MR. BLANCHET: Yes, sir.

CHAIRMAN NANCE: Thank you. **With no opposition, the motion carries with no opposition and with two abstentions.** I will say that let's continue on the down below, on the TORs, and so I guess it's up, and I'm sorry.

The justification for years, we would be put a no there, and then, for Number 3, is additional clarification needed, we would say, if they want to change the number of years, we would need more justification for why we would go to a subset of those four years. Okay. We can start with Mississippi, and we may not -- We've got tomorrow, too.

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

CHAIRMAN NANCE: Okay. Do you want to do that first? Okay, and so let's go ahead, and we will defer and bring up Mississippi in the morning. Okay. Let's go ahead then and go into -- So, tomorrow, we have a continuation of this, and we also have gray snapper, and Dr. Forrestal was leaving this afternoon, but she told me that she would stay, because we're going to make her give it tomorrow morning, and so we'll have you here tomorrow. That's a joke, but, anyway, we appreciate you staying here.

Let's go ahead and go into the public comment portion of our meeting. If any in the audience, or any on the phone, would like to participate in public comment, please let us know, and we'll be happy to do that. Kevin, I hope you're still on, and I greatly appreciate that presentation, and that interaction, that we had during the day.

MR. ANSON: You're quite welcome, sir. My pleasure, and thank you for, again, entertaining the request. Thank you.

CHAIRMAN NANCE: Absolutely, and thank you for being on. I look forward to seeing you at the council meeting.

MR. ANSON: Same here. Safe travels.

CHAIRMAN NANCE: Okay. It looks like we have no public comments at this time, and so we'll go ahead and adjourn for the day, and we'll be back here at 8:30 in the morning, and we'll look forward to another productive day.

(Whereupon, the meeting recessed on January 11, 2023.)

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January 12, 2023

THURSDAY 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 Thursday morning, January 13, 2023, and was called to order by Chairman Jim Nance.

CHAIRMAN NANCE: We'll continue with the evaluation of the calibrations from yesterday, and we had each of the states, and we were able to get through Florida and Alabama with our discussions, and now we're going to bring up with Mississippi and go ahead and start our deliberations on that part. Trevor.

MR. MONCRIEF: All right, and so, before we get down to this, if you wouldn't mind pulling up that table.

CHAIRMAN NANCE: Is this the one that you sent last night?

MR. MONCRIEF: It was sent this morning.

CHAIRMAN NANCE: This morning? Yes. Thank you.

MR. MONCRIEF: So, after we submitted this yesterday, and we were going through everything, we fixed a minor transcription error in the harvest estimates, but the bigger point is that we were using an FES to CHTS ratio of 2.18, and that came from the 2020 table that was provided during the last time we went through calibrations, and so, in an effort to make things exactly how they were last time, we just assumed that ratio was fixed at 2.18, not realizing that it was changing over time, and it changes with the years and everything that are being used.

We submitted that in our calibration documentation, and it was noticed by Andy's group, and we got back together and looked at everything, and that FES to CHTS ratio should be 1.66, and so, essentially, the only thing that changes is that relationship there, and there is the output, and so the scenario changed, and I've talked about it with my leadership, and they've accepted it as still the scenario, even regardless of the output.

I guess I will say, you know, if this group feels like the evidence we provided was good enough to go with this ratio, great. If not,

this is still the only scenario that's going to be provided, and so, if there's a recommendation for another scenario, just say -- Just make a motion as to what the years and everything else are, and then it can be accepted or not accepted by my leadership, and so that's all I had.

CHAIRMAN NANCE: Thank you very much, Trevor. I appreciate that. We'll pull up -- We need to get to the presentation here, so we can see where we're at. I am just trying to pull up, on my own, the Mississippi presentation. There we go. Let's go ahead and go down to, I guess, the recommendations.

MR. MONCRIEF: There is no recommendation scenario in my presentation, and so we have to go back to that table.

CHAIRMAN NANCE: This one right here?

MR. MONCRIEF: No, the one that I sent earlier.

CHAIRMAN NANCE: Okay. I am trying to think of -- What this one is, it's the years are 2018, 2019, and 2020. Go ahead.

MR. MONCRIEF: 2018 through 2020, just Waves 3 and 4.

CHAIRMAN NANCE: Waves 3 and 4. Okay. That's what I was -- I couldn't remember which waves, and so 3 and 4. 3 and 4 are the waves. Okay, and so is there discussion around that? Yes, Sean.

DR. POWERS: Trevor, the reason you're not including 2021 was your calculations that showed that it was just an unrealistic number, and it just physically was not possible, and you had the same feelings, or a little lesser, for was it 2018?

MR. MONCRIEF: 2019.

DR. POWERS: 2019, but you decided that you wanted at least three years, and to include some of the error in the average.

MR. MONCRIEF: Yes, and so we noticed the trend in the large magnitude of Wave 3 estimates for both of those years, but, in an effort to have consecutive years, and more than just two, we chose 2018 through 2020 and left off 2021.

DR. POWERS: Okay, and then you're not worried about COVID concerns in 2020, and you all had about the same --

MR. MONCRIEF: Yes, and so we were back to work really within a month-and-a-half. We were back in the office and doing surveys

and everything else, and I would reckon to say that our survey percentage was probably -- I am positive that it was right there within the realm of what we observe every year.

CHAIRMAN NANCE: Your methodology, as far as calculation, has not changed?

MR. MONCRIEF: Yes, and it's the exact same as what was done in 2020, and so it's from the same table.

CHAIRMAN NANCE: Okay. Perfect, and so, as far as looking at our TORs, the recommendation -- For Number 1, is the proposed revised calibration ratio calculated in the same method, yes, it is, and so I think that would be a yes for that TOR, and it's basically the same. The Number 2 is you used to use -- It was 2018 and 2019, Trevor?

MR. MONCRIEF: Yes, and the previous proposal was 2018 and 2019, all waves, and so is the annual estimate.

CHAIRMAN NANCE: So, basically, what we're doing is we've added a year, and we have -- We're going -- Instead of all waves, we're using just the last two, 3 and 4.

MR. MONCRIEF: We're using the prime waves from which the red snapper season occurs, Waves 3 and 4, because of the occurrence of Wave 5 with the small sample estimates that seem to diverge.

CHAIRMAN NANCE: Okay. Thank you. Josh.

DR. KILBORN: Thank you. I am curious, and do you have the numbers for the scenario of 2018 through 2021, including that one year that you didn't like, so that we can at least compare? I didn't see it in the presentation anywhere, and I wasn't sure if we had talked about it and I missed it.

MR. MONCRIEF: I didn't have it in the presentation, and this is the scenario that was approved and provided by MDMR and approved by our executive director and leadership.

DR. KILBORN: I understand all that, but I was just curious if we could have the numbers to compare, just to see, you know, what it looks like, that's all.

MR. MONCRIEF: I mean, I can tell you that it's similar, and it drops it down just another 10,000 pounds, to be honest with you, but the values are included in the meeting materials.

DR. KILBORN: Thank you.

MR. RINDONE: Josh, there's that table of landings, the Excel file, that's included in the background information, and so those things can be pulled out of there.

DR. KILBORN: Got it. Thank you.

CHAIRMAN NANCE: Thank you, Ryan. Roy.

DR. CRABTREE: I think I don't, on the face of it, see an issue with Waves 3 and 4 only, and I understand, I think, why you would want to do that, and I am very sympathetic to the problem with small states and the volatility of these estimates, and you're not alone in having some skepticism about some of these high landing estimates.

The problem I see with deleting I guess it's 2021 -- The problem I see is, as best I can tell, it's being deleted just because it's high, and the purpose of this calibration is to be able to switch from Tails 'n Scales -- The purpose of the calibration is to be able to convert from Tails 'n Scales to the MRIP-CHTS, and the fact of the matter is the MRIP-CHTS survey produces high estimates, periodically, and my worry is, if you delete a year just because it's high, that you're biasing your calibration now, because you've eliminated the high on it, and so it's going to not adequately convert from one currency into the other if you do that, and so, to me, I don't think that's scientifically the way to go.

I understand, from a practical matter, you guys' position, and maybe that's what the council ultimately will decide to do, and we're not talking all that many fish, and likely it would just be lost in the error associated with the whole catch anyway, but, just from a science point of view, I think it has the potential to bias the calibration, and so, in that sense, I don't think it's appropriate.

CHAIRMAN NANCE: Thank you. David.

DR. GRIFFITH: Thank you, Mr. Chair. Yes, I agree with Roy, and it seems, to me, that we're getting into the same deal that we had with Alabama yesterday, of them just throwing out a couple of years because they just didn't quite seem right to them, and this strikes me as more or less the same kind of issue, and so I agree with Roy that maybe 2021 should be in there.

CHAIRMAN NANCE: Any other discussions? Andy, please.

MR. STRELCHECK: Thanks for allowing me to speak. I guess a question, for either Trevor or the statisticians of the group, and, with Mississippi in particular, they have these periodic spikes in landings, and I guess the way I've thought about this is, if we're trying to calibrate, it's not going to perfectly replicate the change from FES to Tails 'n Scales in any one year, but, on average, you're trying to essentially simulate what we think might happen.

To me, the reference period for determining the calibration should be kind of consistent with the periodicity with which those spikes occur, and so, if they occur every two years, or four years, or three years, right, the calibration seems like it would be representative of capturing one of those spikes during that time period, but you wouldn't want to capture multiple spikes, if they're not occurring as frequently as the timeframe you're using for reference. I just pose that, I guess, as a comment, but also as a question, and I don't know the answer to that, and whether or not that is helpful, in terms of considering the timeframe for calibration.

CHAIRMAN NANCE: Thank you. Trevor.

MR. MONCRIEF: I appreciate that comment, and it's just we observed what we had, and we looked into why it might be occurring, and that's the kind of thought process that we went through, was that you see spikes, and they occur in some waves in some years, and other waves in other years, and we just tried to find a balance between all of that, by using the three years, but I can certainly understand the argument to use all of them.

CHAIRMAN NANCE: Sean.

DR. POWERS: I understand what you're coming from, Roy, but, as scientists, we look at data streams and determine what numbers are realistic and which ones aren't. I mean, I won't say it's an outlier, because that's a whole statistical test and everything, but what convinced me, in Trevor's presentation, is he showed how that number just wasn't possible, I mean, and so eliminating that data point doesn't -- I mean, it's different than some of the other cases we were shown, where that evidence wasn't there, and, I mean, he showed us that that number was just physically impossible for them to do. Eliminating outliers, or non -- Or gibberish numbers from a string of data, I mean, we do that all the time in science.

CHAIRMAN NANCE: Roy, to that point?

DR. CRABTREE: Well, I don't even want to go down the debate about

what is realistic or not, and I've heard those arguments go both ways, but the thing is though that, I mean, you can argue that the CHTS and FES estimates are unrealistic, period, and they're too high, but what you're trying to do here is come up with a conversion between the two, and that means that you need to reflect those, to make the conversion work, or it's going to be biased.

I don't really think that it's an issue of whether the numbers are high or not, and whether you believe them, but the fact is that you're trying to convert between the two, and so they need to be included.

Now, Andy makes an interesting point, and we have a relatively short number of years here that we're dealing with, just four, and I suppose there is some statistical way to evaluate how many years should you have, and how many spikes should it have, and maybe there is smoothing routines that could be applied and all that, but that's beyond my statistical knowledge to be able to figure out at this point, but I am not convinced that the question of whether they're realistic, or you believe them or not, is all that relevant, and the reality is that you're trying to convert between the two, because that set of high estimates, believe them or not, are what are used in the stock assessment, and they're what are used to produce these quotas. It does seem, to me, that not including them in the calibration would bias you, and it would cause you to produce biased estimates of catch.

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: I think that's been kind of the back-and-forth the entire time, and, as I said, we tried to find a balance and find a scenario that we feel like would be representative between all those spikes and everything else, and, I mean, at the end of the day, if the group feels like it's more representative to do the four years, then that's the group's feeling, you know what I mean, and, I mean, we can go back and forth on this all day long.

The estimates are the estimates, and that's what we've got to work with, and I don't think there is -- Identification of outliers, and, I mean, it's just not going to happen here. That's not a discussion to go down, and it's the estimates are the estimates, and how do we find a balance, and, if the balance is three years, or the balance is four years, I think we've just -- We have to make that choice and see what happens.

CHAIRMAN NANCE: Thank you. Josh.

DR. KILBORN: Thank you. I kind of wanted to go back to what Sean

was talking about, and, you know, I understand his point, where, you know, we make decisions about data all the time, and I don't disagree with that, but my problem here is that the decision is to treat two data points that are similar in different ways, and so, if you're going to exclude 2021, then I feel like you have to exclude 2019 as well, and, if you're going to include one, then you have to include the other, because, mathematically, statistically, compromises are not a thing. That's kind of my take on that whole thing, is I really do feel like you've got to include both or exclude both. Thank you.

CHAIRMAN NANCE: Thank you, Josh. Jim.

DR. TOLAN: Thank you, Mr. Chairman, and, while I completely understand Dr. Crabtree's reservations about this one data point and the data stream, but, in my reading of TOR Number 2, I think there's been sufficient justification by the State of Mississippi of why they went the way they did, because, under the umbrella of this whole thing, at least in the back of my head, while the Coastal Household Telephone Survey may produce large estimates, no matter where you go, it really breaks down, the smaller the temporal area, or the spatial area, that you apply it to.

I think they went above and beyond to try to find out what was causing these outliers, if you want to call them outliers, and so I think, based on my reading of TOR Number 2, the justification is there, and I think we should move forward with the resulting ratio that they've come up with, and so what they have done I think satisfies, for me, TOR Number 2. Thank you.

CHAIRMAN NANCE: Thank you, Jim. Paul.

DR. MICKLE: I think it was Josh that said that, statistically, we don't compromise, and I agree with that part of it, but the other part of including 2019 and including 2021 and the compromise there, and uncompromising, it just falls down to the identification in the data and the science of it, and so, last night, I did one of my favorite things after a nine-hour meeting, is to pull up literature and read until midnight, and I found just a wonderful paper, by luck, and it's Aguinis et al. 2013, and it looks at outliers in every form and sense and approach that you can do.

They gave out fourteen different pathways and justifications for doing so, but, when you think about Mississippi and the spikes, and the spike considerations that have been brought up here today, and the dangers of those spikes, if Mississippi is truly a unique survey, a census, if we all believe that, then I think we have to account for those spikes, in a way.

If 2019 seems realistic, and 2021 doesn't seem realistic, then it really isn't a compromise, because we do this all the time, and I think we can identify outliers, from a quantitative standpoint, and, within the manuscript, and I can send it out to everybody, if they so choose, the twelfth identification point that they make is an observation that not only has a large absolute value, compared to surrounding others and time series analysis, but also affects the values of subsequent observations in unequal amounts.

In SEDAR, in the data process, if they think there's a data point that is unrealistic, they approach that in a similar way, and so I don't see the difference here, and I must disagree with Roy in that part of it, of the SEDAR process. As scientists, we identify what outliers are, and there is fourteen different ways to identify outliers, but some are time series, and some are abrupt steep changes, jumps, in values of subsequent observations in a series, and, of course, it's a really complicated paper, but, again, it provides justification.

I think there is thirty-five, or forty-five, papers cited in this, and it's published in a journal that has an impact factor of 11.7, which is quite impressive on itself, and so, when you think about what this body does, and what we lean on, as far as scientific literature, in my opinion, I feel like justification can occur from an outlier sense of the science, identifying what it is, what's realistic and what's not realistic, and, if 2019 is a realistic number, as identified by the surveyors and science, and 2021 isn't identified as a true representation, and is a spike, then I would think that this literature supports such a decision. Thank you.

CHAIRMAN NANCE: Thank you. Paul, would you please send that to the Meetings? You may have to walk up and look, and I can't see that far, but, anyway, there it is. Will.

DR. PATTERSON: Thank you, Mr. Chair. Paul raises an interesting point here, but, as far as looking at outliers, right, you have deviations from a trend, and we have four data points here, and two of them are similar on one side, and two are similar on the other, and so you have a bimodal distribution, and I'm not sure how you pick an outlier from a bimodal distribution where each mode has an N of two.

The thing that I have been struggling with, throughout this discussion about these calibrations, is how to make objective, scientific advice, form objective, scientific advice, based on empirical information and the tools that we have at our disposal,

the data we have at our disposal, and I can't, and one of the more important lessons -- I mean, everybody around the table has been a graduate student, and some of us still have students, and one of the more important lessons that we learn, or teach, is that it's okay sometimes to say I don't know.

I think it's a perfectly reasonable thing to tell that council, that, based on what we have in front of us, we don't know, and there is no objective way to make a decision here. You know, from a management perspective, you will have to make a decision, but, you know, we try to work through things, as best we can, in many different scenarios, and provide the council the advice that it's seeking, as it puts stuff in front of us, but I don't have any problems saying that I don't know, and that's what my abstentions yesterday, and I will abstain from this vote too, because I don't know.

CHAIRMAN NANCE: Thank you, Will. Trevor.

MR. MONCRIEF: Just real quick, to that point, I mean, that kind of hits the nail on the head. The truth is, when you look at the entirety of the time series, the annual estimates, the wave estimates, all of them, there is variation, and there's ups and downs, and it covers a whole range.

We did our best to try to carve through it and figure out the best way we thought forward, and, at the end of the day, yes, there's a lot of uncertainty with all of this, and it's tough for this group to decide, and I can certainly understand that, and I think, at the end of the day, like I said, if we choose to go one route, I mean, we can make that choice. If we choose to go with the scenario proposed, we can go with that, and then the uncertainty in the management side and everything else can be left up to the council.

CHAIRMAN NANCE: Thank you. Sean.

DR. POWERS: So Will brings up a good point, I mean, you know, how we decide what years and all of that, you know, and it's hard to be objective and find some objective criteria to do that, and that's why, I guess, I defer to what the state managers think.

Now, with that in the back of my mind, especially for Mississippi, I realize that there is almost no risk here for the stock, and, I mean, it is a small number, but I know the risk part of the equation is the council's purview and not ours, but, I mean, a little bit of the reason that I particularly think that we should go with Trevor, and the State of Mississippi, is there is very little risk

here, and it is such a small part of the quota, compared to the two states on either side of them.

I guess, if it's okay, I will bring up the motion. Can you bring up the motion that I sent? **The motion is just the preferred option of the State of Mississippi.** I sent it to Meetings.

The other reason that I mention risk -- The other thing is I think we all are going to spin our wheels for quite some time, and so we should -- At some point, we do need to decide, because we decided for the other two states.

CHAIRMAN NANCE: Yes, and I do think, as an SSC, we need to give advice, and that's what we're here for, and so, as we go through these deliberations and be able to give our best advice to the council. Is there a -- I am going to read this motion that Sean has put out.

The SSC recommends acceptance of the updated Mississippi calibration from Tails 'n Scales to MRIP-CHTS that uses 2018 through 2020 as the base years and restricts the harvest comparison to just Waves 3 and 4. The calculated ratio is 0.50305 in pounds of red snapper. Do I have a second for that? Will.

DR. PATTERSON: I'm sorry. I will let it be seconded first.

CHAIRMAN NANCE: Do we have a second for this motion? Steven. Will.

DR. PATTERSON: I mean, the logic that Sean just walked through here was that it doesn't have much effect, and it's not going to have much risk, relative the overall quota in the recreational sector and the overall quota in the entire fishery, and the same argument could be made to keep the status quo, right? I mean, right now, they have 150,000 pounds, and it's a pretty small proportion, percentage, of the overall recreational quota, and so, you know, I don't see why a motion that says we don't have any information that would suggest changing the current calibration ratio -- That the change is more informed, or better, than what is currently on the books. I mean, that would seem, to me, to have the equal amount of scientific validity and support as this motion.

CHAIRMAN NANCE: I'm going to go to Sean and then Trevor.

DR. POWERS: I agree with you, Will, but my understanding is that's not an option, and the state -- The Regional Office, will change each state's one, and so I agree that keeping the status quo -- I mean, that's one of the arguments that I made, is keeping the

status quo until the new assessment is out and resolves all of these things is the sound scientific approach, but I think the reality is the Regional Office will change it.

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: Yes, and the calibrations of 2018 and 2019 have already gone and passed and are in effect, and that calibration ratio I think is 0.38, and so that represents a 60 percent overall reduction in the fishery, and so defaulting will just lead us into that.

CHAIRMAN NANCE: Andy.

MR. STRELCHECK: Just to that comment, and I said it I guess yesterday, and it's up to this body, and ultimately the Science Center, to determine whether this is best available science, right, and so you are building a record with regard to your decision about calibration.

Whether you decide it's 50 percent, or no calibration is needed, you know, you need to build that record, and, ultimately, the council, and the Regional Office, will then have to take management action and ensure that's best available science, in order to implement it, and so I don't think it's off the table to say that Mississippi has to be calibrated, right, but I think it's up to you then to build that record as to why you wouldn't be calibrating them, but you're calibrating the other states.

CHAIRMAN NANCE: Thank you. Harry.

MR. BLANCHET: Thank you, Mr. Chairman. Going back to the purpose of this exercise, what we're really trying to do is something that is, at best, awkward, which is project into the future beyond the available data with existing values that are highly variable and trying to predict, with some degree of precision, what the final estimate of the CHTS, or FES, harvest will be, given a value of the state survey.

For Mississippi, they showed that there is not a whole lot of relationship between those sets of values, and so, whatever number we use, you are going to be more conservative than just accepting the Tails 'n Scales value as the true value, which, as I appreciate it, is what has been done up until now, but the variance around that projection is such that I don't know that we can really give a whole lot of confidence in any statement saying that this is better, or not as good, as -- Just based on the scatter of the data. There is not a whole lot of predictive value there. Thank

you.

CHAIRMAN NANCE: Thank you, Harry. Josh.

DR. KILBORN: Thanks. I just wanted to go back, a little bit, to the -- I'm still stuck on this conversation about including or excluding 2021, and I just wanted to clarify, and was the estimate for 2019 -- Are they actually considered realistic, and 2021 is unrealistic, or are they are both considered to be unrealistic, but 2019 is still included as the, quote, unquote, compromise?

CHAIRMAN NANCE: Trevor.

MR. MONCRIEF: One second. Let me pull it up, so that I can try to explain it in the best possible manner. Essentially, what we see is two large spikes that occur in Wave 3, for those two years, right, because the body of evidence that we presented for Wave 5 I think is substantial enough to be able to show that, when you get into low-sample-size waves, you start to have a large divergence in harvest estimates.

The Wave 3 estimate for 2019 was high, and the wave 2021 estimate was higher, and, now, essentially, both of them are realistic, and a lot of these are. Now, what we tried to do was say, well, if our goal is to balance between, you know, the two surveys, and try to come up with a way to say what the relationship is between the two of them, and we then think that what would happen in Wave 3 with these spikes would continuously occur, and so we said the best possible route for us was to include one of these values, and say that, you know, in that comparison, it's likely that this may occur in the future, and so that relationship was dictated just on the fact that, yes, we might have spikes in Wave 3, and that's representative, but we don't want to be fully -- We don't want to fully include 2019 and 2021, because of what we observed in 2021, with a 600-pound estimate for Wave 3.

I don't know if that explains it, but, yes, there is consternation with both of them, and we're just, like I said, trying to find a balance between.

DR. KILBORN: Do you have these spikes in Wave 3 historically, and have they -- I mean, because I see on, I guess it's Slide 6 of your presentation, you've got the MRIP effort time series, and it shows Wave 3 is consistently the highest wave, which makes sense, but I am just wondering, and did this problem present itself in previous years, and, if so, why would you think that it's not going to continue, moving forward?

MR. MONCRIEF: It did not present itself in the same manner, and that is because the season structure, and the historical nature of the fishery, did not lend itself to having those spikes as much, and so, essentially, what is occurring, and what I tried to describe yesterday, is that there are two sites, essentially, that govern the ratio of area fished for the State of Mississippi. If those sites are selected on opening weekend, or the second weekend, on a Saturday or Sunday with good weather, there is a large potential for a large amount of surveys to come through.

DR. KILBORN: That happened in 2019 and 2021 or just in 2021?

MR. MONCRIEF: Yes, it happened in 2019 and in 2021. In 2019, it was West Beach and Bayou Casotte, and, in 2021, I think there was like 110 surveys that occurred at West Beach, and so we obviously -- I mean, the selection for those sites is random, and it's probability of proportional sample size, and, I mean, it's all done correctly, and it's simply, if those sites get selected on the right day, because it might be opening weekend on a Saturday, but, if it's blowing, we're not going to get many surveys, and it's just kind of a culmination of unfortunate circumstances that lead to a large amount, and so it was difficult for us to say, yes, it's going to happen throughout the future, because, to us, it's pretty random, and we're just not -- We're unsure of how the estimates are going to play out.

If you notice -- I mean, I'm not going to skip over it, right, and I presumed this on the last slide, and the current estimate for 2022, at 790,000 pounds, is the highest one that's observed in the entire time series of the modern fishery, outside of a single estimate of 1.2 million pounds, and so it happened again, right, but there's just no way for us to be able to predict it. It's just hard for us to predict, and so, with that, and with the relationship being, you know, all over the place, we tried to find a pathway through it, and what we thought was appropriate.

DR. KILBORN: Thank you. I appreciate you walking me through that.

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

DR. CODY: I will just make the point, again, that numbers of intercepts is not an indicator of fishing effort, in this case, as far as probability of surveys are concerned, because they're weighted based on the sample frame itself, and so you have weighting that occurs to account for the fact that you're getting more of your intercepts from those sites.

Now, is that perfect? Probably not, and it does depend on the

distribution of samples across the sites, and across the wave, and so, when you get to smaller time periods, there is the potential for, you know, random effects to occur, but I have to make that point.

CHAIRMAN NANCE: Thank you, Richard. Trevor.

MR. MONCRIEF: I appreciate that point, Richard, right, because this is a conversation that is still ongoing between our two groups, trying to figure this kind of stuff out, right, and this stuff isn't set in stone. What we've presented in these are just our hypotheses, or our thought processes, as to what's going on, and we're still trying to figure this stuff out, and we've got multiple years of research trying to line up to figure this stuff out, and so, yes, I apologize, Richard, if that was -- You know, I wasn't trying to make that point, and I was simply trying to project what our hypothesis was and what was going on.

CHAIRMAN NANCE: Thank you. I see -- I am struggling with 2021, and I -- Well, 2019 and 2021 seem to be very similar, and I would think that both of them need to be included into the ratio. I have no problem with using just the two waves, and I think you have provided great justification and shown -- I mean, you've done a great deal of research on this, and I appreciate that, and so, from the standpoint of that, I would like to see 2021 included, but we'll go ahead and move forward with the vote, I think. David, did you have a comment?

DR. GRIFFITH: Well, I just wanted to say that I still have concerns over the logic that we're using here, and we're saying that it's okay for Mississippi to throw out a year, because it looks weird, but it's not okay for Alabama.

Now, I understand that Mississippi is a unique case, and they have -- I mean, because of the fact that they are such a small region, and they certainly know their data really well, and they know -- I think they know their fisheries really well, and you could maybe make some sort of justification for that basis, but it seems like we're sending a message, to Alabama, that, well, you guys don't know what's going on, but Mississippi does. Thanks.

CHAIRMAN NANCE: Thank you. Roy.

DR. CRABTREE: If I am understanding it right, you have another spike in Wave 3 in 2022, and so it's not really an outlier, and this is a rather common feature of the variability of the data, and it recurs again, and so it's hard for me to see how we have a real basis, a scientific basis, for just excluding it.

CHAIRMAN NANCE: Thank you. Let's go ahead and bring up the motion, Jessica, and I think there's a good variety of opinions. I am going to read the motion, and then let's go ahead and do a roll call vote.

The SSC recommends acceptance of the updated Mississippi calibration from Tails 'n Scales to MRIP-CHTS that uses 2018 through 2020 as the base years and restricts the harvest comparison to just Waves 3 and 4. The calculated ratio is 0.50305 in pounds of red snapper. Sean.

DR. POWERS: I think Ryan wanted, in the last motion, and I forgot, for the private rec and state charter, and I'm not sure if state charters are included in this.

CHAIRMAN NANCE: Thank you, Sean. I think that's good.

DR. TOLAN: Just a point of clarification, Mr. Chair.

CHAIRMAN NANCE: Yes, Jim, please.

DR. TOLAN: Do we want to maintain that many significant digits in the estimate? It seems to be a bit much.

CHAIRMAN NANCE: This was a real precise one. Anyway, this is -- I think that's good, three decimal points out, and thank you for bringing that up, Jim. Harry.

MR. BLANCHET: Similar also to what we've done with Alabama, and explain what that ratio is, because it's not MRIP over -- Is it Tails 'n Scales over MRIP or MRIP over Tails 'n Scales?

MR. RINDONE: So just copy that, and then, after you paste it, change "Snapper Check" to "Tails 'n Scales". Then, in the last sentence, the updated calculated ratio is blah, blah, blah.

CHAIRMAN NANCE: Okay. Thank you, and I think -- Sean and Steve, are you okay with those --

DR. POWERS: Yes.

CHAIRMAN NANCE: Thank you. Let's go ahead and, Jessica, do a roll call vote on this one.

DR. ISAACS: Actually, another small point.

CHAIRMAN NANCE: Jack.

DR. ISAACS: The abbreviation that we use for pounds, lb, comes from a Latin word, and the Latin plural wouldn't have an "s" on the end of it, and so we probably just need to do pounds or "lb.", for pounds plural.

CHAIRMAN NANCE: Okay. Thank you.

MS. MATOS: Steven Saul.

DR. SAUL: Yes.

MS. MATOS: Jack Isaacs.

DR. ISAACS: Yes.

MS. MATOS: John Mareska.

MR. MARESKA: Yes.

MS. MATOS: David Chagaris.

DR. CHAGARIS: Yes.

MS. MATOS: Doug Gregory.

MR. GREGORY: I abstain.

MS. MATOS: Trevor.

MR. MONCRIEF: Abstain.

MS. MATOS: Sean Powers.

DR. POWERS: Yes.

MS. MATOS: Jim Tolan.

DR. TOLAN: Abstain.

MS. MATOS: Will Patterson.

DR. PATTERSON: Abstain.

MS. MATOS: Paul Mickle.

DR. MICKLE: Yes.

MS. MATOS: Benny Gallaway.

DR. GALLAWAY: Abstain.

MS. MATOS: Harry Blanchet.

MR. BLANCHET: Yes.

MS. MATOS: Jason Adriance.

MR. ADRIANCE: Yes.

MS. MATOS: Luke Fairbanks.

DR. FAIRBANKS: Yes.

MS. MATOS: Steven Scyphers.

DR. SCYPHERS: Yes.

MS. MATOS: Jim Nance.

CHAIRMAN NANCE: I am going to say no.

MS. MATOS: David Griffith.

DR. GRIFFITH: No.

MS. MATOS: Roy Crabtree.

DR. CRABTREE: No.

MS. MATOS: Mike Allen.

DR. ALLEN: Yes.

MS. MATOS: Cindy Grace-McCaskey.

DR. GRACE-MCCASKEY: No.

MS. MATOS: Josh Kilborn.

DR. KILBORN: No.

CHAIRMAN NANCE: Thank you, and I'm going say one thing, before Trevor, and I just want to say that you guys did an excellent job in that presentation. It was well thought out, and I felt like you were able to present things that needed to be presented, and

your presentation was excellent, and so thank you for doing that. I know it was hard, but I appreciate your efforts. I appreciate the discussion we've had as an SSC, and I feel like we had a good discussion around this, and I was torn between that last year, but, anyway, thank you. Trevor.

MR. MONCRIEF: I mean, I think it's fair to note here, when it's presented to the council, that there was a fair amount of abstentions, and it wasn't a unanimous vote, and I think that reflects the complexity of the topic at hand, and, if you think that we've got it all figured out -- We don't either, and, I mean, it's an ongoing topic that we're trying to figure out, because this has got an effect not just for red snapper, but it's for multiple species, and so, you know, I was happy to convey what our concerns were, and what we're dealing with, and we're going to try to keep doing things better, and I think the next two or three years of research that are proposed in the transition process -- I am hoping it will get us to a better place the next time this comes up.

CHAIRMAN NANCE: Thank you. We'll go ahead and move on to our next agenda item, which is -- It must be gray snapper here. We're going to do the reevaluation for gray snapper. Benny, please.

DR. GALLAWAY: Did I miss -- Did we finish the terms of reference here, or did we skip from 1 directly to the motion and not address the Terms 2 and 3?

CHAIRMAN NANCE: I think -- Thank you, Benny, and I appreciate that, and so Number 2 would be yes, and then Number 3 -- There wasn't any additional clarification that I -- We certainly -- If there is any clarification that we would like to see, and does anybody have any? Okay. If not, then we'll put a no there, but thank you, Benny.

DR. GALLAWAY: Thank you.

CHAIRMAN NANCE: We have two choices. We can go through the whole presentation again, but we'll probably just go down -- Things haven't changed above, and so we'll go down to the projections, and we'll have Dr. Forrestal go ahead and give that part of the presentation to us, so that we can make our recommendations.

REVIEW OF SEDAR 75: GULF OF MEXICO GRAY SNAPPER (CONTINUED)

DR. FORRESTAL: Okay. Perfect. Good morning, everybody, and so these are the requested projections. We updated the interim catches that were presented the other day, and so, for the

commercial landings, we pulled them from the website, and they weren't -- They did not split out by fleets, and the currency is different than what was used in the model, and so we applied the percent change observed to the -- To model the commercial landing fleets and split them out by the three fleets in the model.

Then, for the interim recreational landings, the FES landings were provided for 2021, by Mike Larkin, in pounds whole weight, by fleet, and so we were able to do that directly. They were in pounds whole weight, like I said, and so we had to apply the mean weight from the terminal year in the model to each fleet to obtain the landings in numbers.

Then there was also a request to reexamine the FMSY proxy, and so we have an FSPR proxy of 30 percent and then at 26 percent, and so the benchmarks were updated, and so you can see the differences in the values between the two columns, and so the 30 percent and the 26 percent is on the far-right-hand column.

Updating the stock status with these two different FMSY proxy definitions, on the left, we have what was presented earlier, the 30 percent, and on the right is the 26 percent, and so the stock is still not overfished nor undergoing overfishing.

CHAIRMAN NANCE: Any discussion on those two plots? It moved in the right direction, which is good.

DR. FORRESTAL: Then, moving on to the updated projection settings, the only thing that has changed on this slide is the interim landings values, and so we have the 2021 interim landings calculated as described for the commercial, and then these are -- I'm sorry. The commercial is in metric tons, and then the recreational is in thousands of fish. The 2021 is the interim landings, and then 2022 and 2023 uses the three-year average, and so 2019, 2020, and 2021, and so it takes into account those interim landings.

These are the one-hundred-year projections that were done for each of the FSPR scenarios, and this just shows the harvest rate and then the SSB out projected a hundred years, and these were used to obtain the yield projections that we're going to go over in the next two slides.

These are the OFL and ABC projection tables for the management year, which begins in 2024, and we have the million pounds whole weight, for the OFL and the ABC, on the far-right column. The values for 2018, 2019, and 2020 are the yield from the model, and then 2021, 2022, and 2023 are the interim landings, and then the

projections begin in 2024, and so that is what you're looking at with the confidence intervals.

Then, looking at it using the FSPR 26 percent, the landings -- The OFL and ABC projections do increase a little bit, to reflect the more productive stock, the lower benchmark.

Then we also have a constant catch scenario, and so it's a five-year average of the projected catch, or projected landings, in million pounds whole weight, and so that is what we have prepared for you, in terms of projections, and I will open it up to everyone to discuss.

CHAIRMAN NANCE: Thank you, and this is the average catch -- It's just taking the average from the stream?

DR. FORRESTAL: Yes. It was the average of 2024, 2025, 2026 -- It's 2024 through 2028, the averages.

CHAIRMAN NANCE: Okay, and so, in theory, this is the one where we would be underfishing and then overfishing, and, basically, we're taking the mid-point of the stream.

DR. FORRESTAL: Yes, and so if you -- I don't have a cursor, I don't think, but this just gives you a straight line, pretty much, between these streams.

CHAIRMAN NANCE: Okay. Thank you, and so we have those three. Let's go ahead and discuss these projections. You know, unfortunately, we have the catches with it now, but we need to discuss the 26 and 30 percent and constant catch based on merits and not just saying we're looking for different amounts of catch, but, right now, we have, on the books, 26 percent, and we have, in the record, that we felt like 26 percent was maybe too low of a number, and 30 percent would be more recommended, and we need to discuss that, and so those are the things that I would like to hear discussion on. Harry.

MR. BLANCHET: Thank you, Mr. Chairman. This goes back to the slide that we're looking at right now, and, when Dr. Forrestal was discussing this, she said that the result was because of a more productive stock, and I think I would rather rephrase that, in that the stock currently has more biomass in the water than what is necessary to fish -- Essentially, we can fish it down further, and not that the stock is more productive, but that we have more of what we'll call, quote, excess, end quote, fish in the water, relative to what it would be at the metric that our target is, and so I don't think that it's a stock productivity thing, but it's

just where are we relative to the benchmark. Thank you.

CHAIRMAN NANCE: Thank you.

MR. BLANCHET: That graphic of the phase plots shows it perfectly, and it just moves everything into a happier spot, and it's not really reflecting yield per recruit or anything like that, but it's just relative to the benchmark that we're selecting.

DR. FORRESTAL: Yes, I agree, and I misspoke, and it is just relative to the benchmark, and the stock does not -- The productivity of the stock does not change, but it's just how we are viewing it in terms of the benchmarks.

CHAIRMAN NANCE: Thank you, Harry. Any other discussion from the group? Doug Gregory, please.

MR. GREGORY: Thank you. Other than the effect on the quota, what would be the pros and cons of setting the OFL and ABC at more of the long-term level and ignore this short-term excess? In other words, would this excess just get bigger, because we're, quote, underfishing, or would it eventually be caught up in the landings? You know, I've always been bothered by these short-term blips that we have to fish down, and it just seems to be something that could avoid -- If we could avoid it, it would be beneficial. Thank you.

CHAIRMAN NANCE: Doug, I think that's what the constant catch scenario does, is it takes that five-year projection, by year, and then averages it out, so that you have a constant catch throughout that timeframe, as opposed to, in the first year, we catch nine-million, and then seven, and then down to five, and I think it does that, and so I think the avocation would be that that would give us a constant catch over that timeframe.

MR. GREGORY: It's a good compromise, and it doesn't address it completely, but I think it's a good way forward, and it's a good compromise.

CHAIRMAN NANCE: Thank you for that. Ryan, please.

MR. RINDONE: Doug, you had asked what the effect would be of setting it lower, and, I mean, I guess it would be variable, based on trends in recruitment and any differences in harvest, or any other biological factors that might affect natural mortality, or any episodic mortality, or anything like that, and so, in short, probably we don't know, but having some additional amount of fish in the water certainly isn't going to have a negative biological effect for the stock.

MR. GREGORY: To that point, Mr. Chair?

CHAIRMAN NANCE: Yes, please, Doug.

MR. GREGORY: I agree, and that's part of the problem, is we don't know, and it's like we're pretending that we know more and that we can manage better than we really can, by saying, okay, we can go up this one year, and then come down, and, given that we don't know what recruitment is going to be, and we don't know what the population status is going to be, going forward, it just -- That's part of the thing that is bothersome to me, is that it seems to imply that we're better at this than we really are, but, again, the average addresses it, to some extent. Thank you very much.

CHAIRMAN NANCE: Thank you, Doug. Will.

DR. PATTERSON: So I support what Doug is saying here, but I don't think the constant catch actually alleviates the problem. It just averages it over many years, or a few years, and the issue is that we're typically in a rebuilding time period, or phase, for many stocks, and so we fish at the threshold, and then some buffer down to the ABC, because we're trying to, you know, allow the harvest to occur, while rebuilding, but, once you get above BMSY, you should be fishing at the threshold value, at the equilibrium values, because what you're saying is this is the long-term sustainable yield that will -- The stock biomass will increase above BMSY, in times when recruitment deviations are positive, but then, when recruitment deviations become negative, the biomass will still support that level of equilibrium that you estimate it will, because you have this built-in biomass buffer.

I really think this is also a symptom of the current management paradigm that exists under the reauthorized Act, where you don't have a true target, because, if we had a true target, and it was an F value that was some percentage reduction from FMSY, as the stock biomass was above BMSY, the equilibrium values would converge, because you have that biomass buffer built into the system.

Here, we're looking at OFL values, but, really, what the council will be dealing with is the ABC, because the ACL can't exceed it, and so I think Doug is onto something here, and it's something that we should consider.

CHAIRMAN NANCE: Thank you, Will. Roy.

DR. CRABTREE: I guess, Will, I'm a little confused, and you said

we don't have an F target, but isn't that exactly what the ABC is based on, and isn't that 75 percent? How is that not an F target?

DR. PATTERSON: In view, it's not a true target, because it's not something that we're attempting to achieve a biomass value at that level, and the ABC is simply a reduction based on scientific uncertainty, which we typically do with a P* approach and not just some percentage.

DR. CRABTREE: But it is a target, in the sense that we're setting the catches at a level that, in theory, would achieve -- That would be at that F target.

DR. PATTERSON: But it's not where you're trying to put the stock toward, and it's simply buffering away from the OFL, right, and it's just a buffer on the threshold.

DR. CRABTREE: Well, I mean, a think a lot of these calls about whether you want to fish the stock down, or how you want to come at that, to me, those are really policy calls for the council to make. I mean, we've got these projections, and these F values, and I think everything is done appropriately, and so they could fish at these levels, and it would be consistent with the statute.

Now, whether they want to be more conservative, or whether this is too aggressive, I think that's for them to decide, and I think the real call here is are we comfortable, and do we want to just go with 26 percent, or do we want to weigh-in on the 30 percent issue, and it does seem, to me, that we could recommend that we think 30 percent is a better choice, but it's really going to be up to the council to decide, or we can hold off on that discussion to a later date, when some of these issues, really with red snapper, are more resolved and just give them the 26 percent number, and then we've got the declining yield streams, and we've got the constant catch numbers.

Again, that's up to the council how they want to go with that, and I'm personally okay with 26 percent, although I do agree that it's probably at the low end of reasonable SPR proxies, and it's a pretty aggressive reference point, but I think 30 percent is more towards the mid-range of it, but I think that our record indicates that 26 percent is defensible, and, if that's where the council wants to be, I think it's up to them.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: So we're actually hoping to have some discussion about FMSY, or about MSY proxies in general, at the March meeting,

just as a note.

CHAIRMAN NANCE: I guess -- Sean and I were talking about this earlier this morning, but do we feel like gray snapper is more productive, or less productive, than red snapper?

DR. POWERS: I mean, that might be a broader conversation, and tangential, but that was my first reaction, when we were talking about doing this at 30 percent, was that there's some inconsistency there, and do we think that gray snapper is less productive than red snapper, and, I mean, the argument could then be turned that, no, we have to adjust red snapper too, but I don't think of gray snapper as less productive than red snapper.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Yes, I would agree with that, and so I think, from my perspective, I would like to see the whole issue addressed more broadly, maybe if we're going to come back to it, and I would like to see some resolution as to where we're going with red snapper and then come back and revisit this issue, maybe, at a later time, and, Jim, I sent a couple of motions in.

CHAIRMAN NANCE: Okay.

DR. CRABTREE: If you would like to get to a motion.

CHAIRMAN NANCE: Let me get to these two, and then we'll put those up. Will.

DR. PATTERSON: I don't disagree with the rationale and discussion about productivity and 26 versus 30, but I think it's important to remember that, when the 26 for red snapper -- F 26 SPR, and 26 percent as the biomass proxy, that came about because the SSC, at the time, felt that 30 percent was as low as you should go for something that had a life history like red snapper, but the pragmatic endpoint of all of the effort reduction estimation process ended up converging at 26 percent SPR, and the SSC said, well, that's close enough, and we'll go with that, and it's the logical choice. As far as the rationale for 26 or 30, red snapper was intended to be 30, but we ended up at 26 for other reasons.

CHAIRMAN NANCE: Thank you. Paul.

DR. MICKLE: You sparked my interest when you made the pitch of is it more or less productive than red snapper, and so, when you make that statement, you're assuming that the red snapper is somewhat correct, right, as far as a productivity standpoint, which we kind

of -- We don't really know, but the point I was trying to make is, if you do look at kind of what's been studies with life history and things between the two species, and I just want to think out loud and share what I've read over the years, and I'm sure you all have read too, but there was a paper, and I think it was Dylan et al. that looked at stable isotopes and food web placement, and gray snapper was actually a little bit higher on the trophic levels than red snapper.

If you think about that, in the overall ecological and life history discipline, you know, higher-food chain species are less -- They have longer life histories, for the most part, and not all, but they're less productive in their life history strategies than the lower-food-web-based production, life history types, and so, if we need some scientific justification for what's more productive than another, there is some broad-based discussion, science, out there which we could have those conversations, instead of anecdotal-type things, which we should avoid at this group. Thank you.

CHAIRMAN NANCE: Thank you, Paul. There is a motion on the board by Dr. Crabtree. **The SSC moves to accept the SEDAR 75 Gulf of Mexico Gray Snapper Operational Assessment as consistent with the best scientific information available. Under the current FMSY proxy of 26 percent SPR, the model-derived estimates indicate the stock is not overfished and is not undergoing overfishing.** Do we have a second for that motion?

DR. PATTERSON: Second.

CHAIRMAN NANCE: Thank you, Will. Is there discussion? Steven, please.

DR. SAUL: Thanks, Mr. Chair. I had a couple of questions, and one is perhaps more of a procedural question, maybe for council staff, or a comment, but it seems like we're moving towards, as an SSC, selecting kind of benchmark thresholds, you know, like 26 SPR or 30 percent SPR, more on an individual species basis, and I am wondering how -- I am wondering if -- I guess I just want clarification if we are, quote, unquote, allowed to do that, under Magnuson, and then, as a follow-up to that, is there a more empirical way that we could sort of make these decisions, because it seems like we just sort of -- We're, you know, sitting around the table and saying, okay, well, we think that the life history supports this or that, and, you know, like, with red snapper, it was like, okay, close enough, and it was sort of a marginal compromise, if you would.

However, it seems like we're just sort of selecting these values

based on, you know, yes, our knowledge of the species, but we're not throwing any hard empirical -- You know, we're not leaning on any hard empirical studies to determine these threshold values, and so, yes, I would be curious to hear folks kind of respond to that, and then, also, again, procedurally, kind of what's within our scope, or our latitude, under Magnuson.

CHAIRMAN NANCE: John, please.

DR. FROESCHKE: So kind of two parts, but we're required to establish these SDC by species, and so that's certainly within our purview, and we have done this both individually, and we've taken a broader view, most recently in Reef Fish Amendment 48, but I do think that the discussion that we're planning to hold in March would hopefully reinvestigate some of this, perhaps, on a more broad view, and, since we have done that, there is some new information, for example the Great Red Snapper Count and things, that, you know, brought new information regarding the productivity of red snapper, and perhaps similar stocks, and so it's an ongoing discussion, but it's certainly, again, within our purview to do that.

CHAIRMAN NANCE: I agree with that, John. Any other comments from the SSC? Mike, please.

DR. ALLEN: Thank you, Mr. Chair. You know, it seems, to me, that 26 percent is one of the lowest ones that I've seen in my two years on this panel, and I don't know the full justification for the red snapper, because I wasn't around for all of those discussions, but it just seems like -- I don't think we have great evidence, in the assessment, to separate 26 versus 30 percent, but it seems, to me, that we recently did 40 percent for gag grouper, and Will mentioned a recent paper that looked at a database that had a median SPR of about 45 percent for BMSY, and I think we would be better justified to use 30 percent, in this case.

CHAIRMAN NANCE: Thank you. Jim.

DR. TOLAN: Just, I guess, some of the history behind that, and I think Clay put together a pretty intensive presentation that looked at the range from 30 all the way down to 22 for red snapper, and that 26 was sort of the happy medium in between there, and so that's why I think 26 got associated with red snapper. I think we're still on the record, as a body, saying that, for this particular species, we think 30 is a more reasonable number, and so I'm with you on the 30 number, and so thank you.

CHAIRMAN NANCE: Thank you. Doug Gregory, please.

MR. GREGORY: Thank you, Chair. Yes, and our recommendation to go to 30 percent is enshrined in Amendment 51, and I was just reading that earlier today, and yesterday, and so it's there, and we could reiterate it, but it's still the council's choice, and so we have to give them 26 percent and 30 percent, or at least somebody has to present the data to them, and I don't know what would happen if we rejected the 26 percent runs as not the best scientific information available, and I think that's what they might call, in Washington, a constitutional crisis, but it would be interesting, but, as thing stand in the normal way of operating, the council will have both analyses, and they can choose to ignore a 30 percent.

That's kind of an interesting thing with this system, is the council gets to choose the status determination criteria, and all we do is get to choose the ABC from that, and the council is obligated to stay within that ABC, but they can move the goalpost any way they want for us. Thank you very much.

CHAIRMAN NANCE: Doug, thank you. Ryan.

MR. RINDONE: Thank you, Mr. Chair. If you guys were trying to recommend a different FMSY proxy, you would just need to provide justification for why you were selecting 30 percent over 26 percent, based on the biology of the species and observations about productivity and whatever quantitative information that you can point to for that, and then, as far as what to do on the management side of that, you know, it's not really something that you guys have to worry about, and so you just have to get the science right.

CHAIRMAN NANCE: Thank you. Will.

DR. PATTERSON: So the discussion about 26 or 30 is important, and it doesn't really have anything to do with the current motion, and the current motion just talks about the current proxy and whether the estimates indicate overfished or overfishing. I am fine with giving the council advice from 26 percent, given that's what's on the books, and, if we're going to talk about MSY proxies at the next SSC meeting, and get into a more robust review, and pull in some of these life history meta-analyses, I think that's -- That might be the best place to revisit this, but so I'm fine, you know, but, anyway, this motion should be voted on as it states, because it's irrespective of this discussion of 30 percent or 26 percent as the best proxy.

CHAIRMAN NANCE: Thank you. Roy.

DR. CRABTREE: Well, and just to point out that the council could choose to go ahead and manage a lower catch levels, consistent with 30 percent, if they wanted to, because they would be below what we're giving them.

CHAIRMAN NANCE: Thank you. Harry.

MR. BLANCHET: Will said everything that I wanted to say and then some.

CHAIRMAN NANCE: Okay. Perfect. We'll go ahead and vote on this motion. **Is there any opposition?** I am going to read the motion. **The SSC moves to accept the SEDAR 75 Gulf of Mexico Gray Snapper Operational Assessment as consistent with the best scientific information available. Under the current FMSY proxy of 26 percent SPR, the model-derived estimates indicate the stock is not overfished and is not undergoing overfishing. Is there any opposition for this motion?** Okay. **It appears there is no opposition to this motion, and so the motion carries.**

Dr. Forrestal, thank you. That was a great presentation, and there's a second motion. Okay, but I appreciate your time and effort in putting this together.

DR. FORRESTAL: Thank you very much. I'm very happy to have the opportunity to present it to everybody.

CHAIRMAN NANCE: So, Roy, is there a second motion?

DR. CRABTREE: Yes, there is a second motion.

CHAIRMAN NANCE: Okay.

DR. CRABTREE: I'm going to add something to it. Somewhere, I would like to add "or for a constant catch scenario, an OFL of 7.547 million pounds whole weight and an ABC of 6.226 million pounds whole weight". Please check my numbers.

CHAIRMAN NANCE: Can you repeat that, Roy, please?

MR. RINDONE: I am going to check your language, and then we'll check your numbers.

DR. CRABTREE: Ryan is going to edit my language.

CHAIRMAN NANCE: Okay.

MR. RINDONE: How about something like, "alternatively, the SSC

also supports the constant catch scenario”?

DR. CRABTREE: I wouldn’t say supports, but provides.

MR. RINDONE: Okay. You could say --

DR. CRABTREE: If the council chooses.

DR. PATTERSON: I would say that, alternatively, the constant catch scenario, which is a mean of the five-year time series for OFL, is blank, and ABC is blank.

MR. RINDONE: Yes, which is a mean of the five-year time period, and it should be 2024 to 2028 and not 2024 to 2027, at the end of the previous sentence, and so, “Alternatively, the constant catch scenario” -- Then just put, in parentheses, “which is the mean of the five-year time period results in an OFL of -- It’s 7.547 for the OFL and 6.226 for the ABC. Francesca is going to send me the updated presentation, and there were a couple of headers that were changed. That makes it easier for pouring over for a future framework action. It’s million pounds whole weight.

CHAIRMAN NANCE: Okay. We have a motion by Dr. Crabtree. Do we have a second?

DR. PATTERSON: Second.

CHAIRMAN NANCE: It’s seconded by Dr. Patterson. Sean.

DR. POWERS: I have a couple of questions. Ryan, how does this ABC compare to what’s current right now? I would assume it’s an increase.

MR. RINDONE: Yes, and this would be functionally an increase. Right now, the fishery is -- So we don’t have sector allocations for gray snapper, and it’s just managed as a stock, and so the combined landings are oscillatory at about four to four-and-a-half million pounds, in FES currency, and stop me if I’m off-base here, based on what I was looking at.

Under the proposed catch limits, and the catch limits that are proposed are higher than what is necessary to sustain the current harvest levels, there is no commercial trip limit, and the recreational retention limits for the state and federal side of things are both -- Anglers haven't complained about them, and how about that?

DR. POWERS: There is no --

MR. RINDONE: Presumably, if there's no change in retention limits, things would just continue as they have.

DR. POWERS: So there is no history, in this stock, of us going over the ACL?

MR. RINDONE: No.

DR. POWERS: All right, and so the second broader question, I guess, is so the ABC here is based on 75 percent of the OFL, right, and is there a reason that we didn't walk through the P*, because that's a bigger buffer than we usually get.

MR. RINDONE: Well, you guys -- This would fall under Tier 1, and you guys don't like your control rule, and so that would be the only reason why, and I did go ahead and go through it, and, you know, based on my judgment of the assessment and the information and everything, and not you guys running through it, I got a P* of 0.41, which would likely result in a much more narrow buffer than the Restrepo approach that's been applied, and so, if you guys wanted to go through that, we certainly can do that, but that would require Francesca to re-project, and, as we discussed, what you guys have recommended here is not likely to have a measurable effect on the way that the fishery is currently operating.

DR. POWERS: I guess that's -- I mean, I don't want to burn up a lot of time going through it, but I just, you know, wanted to understand why you thought we adopted the 75 percent, and it's essentially that we don't like our control rule.

MR. RINDONE: Yes, and nobody asked to see the control rule that they don't like, and so -- And we had just talked about it, also, and so I went ahead and ran it for you guys, in the event that somebody wanted to know, but you guys have been sticking with some method other than an application of the control rule for the last several stocks, and so it's entirely your prerogative, if you wanted to visit it.

CHAIRMAN NANCE: Roy.

DR. CRABTREE: Well, I mean, that was my rationale in the motion, because, until we readdress P* in the control rule, my assumption was that it will give you an unrealistically small buffer, and these buffers seem reasonable. Plus, it's an increase, and so it made sense.

CHAIRMAN NANCE: Doug, please.

MR. GREGORY: Thank you, and this may be more -- If people are reluctant to make this wording change, but, in the last sentence, the "alternatively", it just kind of leaves me hanging, and I am trying to think how NOAA General Counsel might look at this. I would be more comfortable if it said, "Alternative, the SSC supports the constant catch scenario that results", and that makes it explicit that it's okay with us to go with the constant catch scenario.

MR. RINDONE: Maybe "also supports", and like, basically, that you're treating them as equally acceptable.

MR. GREGORY: Right.

MR. MONCRIEF: Both equal consideration.

CHAIRMAN NANCE: Yes.

MR. RINDONE: Are you saying the SSC equally supports?

CHAIRMAN NANCE: The SSC also supports.

MR. RINDONE: Or also supports. I mean, it's you all's motion, but, however you wanted to say it, such that you're not really --

DR. CRABTREE: I don't want to have any argument over the language or anything, but I just don't want it to imply that somehow we're supporting that they should go to constant catch. I can come up with plenty of reasons why you shouldn't go to constant catch, but it's entirely up to the council.

CHAIRMAN NANCE: I think that language gives that either this or this are recommended.

MR. GREGORY: Thank you.

CHAIRMAN NANCE: Thank you, Doug. Any other comments? I am going to read the motion. **Based on the projection settings accepted by the SSC for the SEDAR 75 Operational Assessment, the SSC recommends the following catch levels for Gulf of Mexico Gray Snapper: OFL be set as the yield (million pounds whole weight) at F 26 percent SPR and ABC as the yield (million pounds whole weight) at 75 percent of F 26 percent SPR for the period 2024 through 2028. The SSC also supports the constant catch scenario (which is a mean of the five-year period) that results in an OFL of 7.547 million pounds whole weight and an ABC of 6.226 million pounds whole weight.** Is there any -- Will, please.

DR. PATTERSON: I didn't catch this before, but the ABCs aren't computed at F 75 percent of F 26 percent SPR. They are computed as 75 percent of OFL.

CHAIRMAN NANCE: Thank you. That's absolutely right. Thank you, Will. You always are great at catching those things, and I appreciate that. Yes, please.

MR. RINDONE: As the yield at 75 percent of the OFL.

CHAIRMAN NANCE: In the middle part, Jessica.

MR. RINDONE: As the yield at 75 percent of the OFL for the period 2024 to 2028, and so just delete the -- There you go.

CHAIRMAN NANCE: It should be "yield" though.

MR. RINDONE: And ABC as the yield at 75 percent of the OFL, and so it's in there.

CHAIRMAN NANCE: Okay. Perfect.

MR. RINDONE: So just delete the F equals 75 percent of 26 percent SPR part. Delete that. Okay.

CHAIRMAN NANCE: And remove one of the "for". Okay. Perfect. Okay. John.

DR. FROESCHKE: Can we check the math? Like, for example, if you take 8.351 and multiply that by 0.75, I get 6.2325 and not the 6.33. I think the way it was is consistent with what they did. That's how we always do it, is based on the F and not just a scalar of the OFL. The only time we've talked about doing that is for OY calculations, but I will yield to the Science Center.

CHAIRMAN NANCE: Peter and then Katie. Go ahead, Peter.

MR. HOOD: In Amendment -- I think it was 48, and, for some stocks, we put it at 75 -- The ABC was going to be 75 percent of the OFL, but then, for other stocks, where we've had assessments, and then going back to older methodology, we used the 75 percent of the FMSY proxy, and so I'm not sure where gray snapper falls out within that, but we've done it two ways, and I know the Science Center preferred the 75 percent of the OFL value, just because it was easier computationally.

DR. FROESCHKE: Peter, that was for --

MR. HOOD: Sorry. He said OY, and so --

DR. FROESCHKE: Yes, and we didn't address any of --

MR. HOOD: Okay. Not with OFL. I take back what I said.

CHAIRMAN NANCE: Okay. Will.

DR. PATTERSON: My apologies, and Francesca can clear this up, but, for the 2024 values, I just divided the ABC by the OFL, and I got 0.75, but, as you move down the list, that ratio changes, and so it could in fact be computed at F -- At 0.75 times F 26 percent SPR, and we just need clarification, so that we can correct the motion.

CHAIRMAN NANCE: Katie.

DR. SIEGFRIED: Yes, and it's 75 percent of the fishing mortality, and so we just wanted to double-check the code. I actually encourage --

CHAIRMAN NANCE: So we need to go back to how Roy has written it.

DR. SIEGFRIED: Right.

CHAIRMAN NANCE: Okay.

DR. SIEGFRIED: I did encourage Francesca to exclude the FOY from the table, because of the conversation we had for scamp, and so that is 75 percent, and so the SSB OY that's in the table is the 75 percent, and it's not something calculated with FOY, and that's why we excluded that, but we can include that again, if it doesn't create any confusion.

CHAIRMAN NANCE: John.

DR. FROESCHKE: I would just suggest that we go to two decimal places and same ourselves some trouble.

CHAIRMAN NANCE: Yes.

MR. RINDONE: **It would be 6.23.**

CHAIRMAN NANCE: Okay. Dr. Gallaway.

MR. RINDONE: **And 7.55.**

DR. GALLAWAY: It's a minor point, but I think it would be -- The motion would be clearer if the last sentence was below the table. In other words, the table followed the 2024 to 2028 and then, after you look at that, then the "alternatively". That would be my suggestion.

CHAIRMAN NANCE: That's a good -- Thank you. Will.

DR. PATTERSON: Do we also need to go to two decimal places in the table?

CHAIRMAN NANCE: Yes, and we'll fix all of those.

MR. RINDONE: We told her to go to three, because we go to three for a lot of other things, and so --

CHAIRMAN NANCE: Go ahead, Katie.

DR. SIEGFRIED: I will just add to the fine-scale comments, and sometimes, when we work with Ryan afterwards, we take it out further, because it's in million pounds, and so, if you tell us -- We can put it here, and then you won't need to revisit us for an Excel spreadsheet, or we can make it simple here, and then you revisit us with the request.

MR. RINDONE: I would like to just leave it at three significant figures for all of it, as a matter of a fact, and then, if we're going to do any rounding, then we can just do the rounding at that time, and so we get different information sometimes from the reg writers about their preference is, and so I would prefer three significant figures.

CHAIRMAN NANCE: Well, let's put three back in the bottom. It's going to be the same. Okay. There may be a little wordsmithing after, as far as the number of decimal places out, but I think the motion, as-is, I think people understand what we're trying to do here. I've read the motion. **We've made a few changes after, just wordsmithing, but is there any opposition to this motion? Seeing none, the motion carries without opposition.**

Okay. I think that's -- Thank you for that presentation and for that. Let's go ahead and break for fifteen minutes, and we'll come back and see if there's any other items that we want to talk about just for a minute. We'll go ahead and come back at 10:30.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: I appreciate everybody sticking around, but the

only reason that I wanted to -- We have two more items that I wanted to bring up, and we have public comment at the very end, but I also wanted to revisit the interim analysis, just to make sure that we, as an SSC, if there's any -- We had the red grouper interim analysis this time, and we chose not to take any action on that, but I wanted just a general discussion on interim analysis and what its purpose is, how long do we feel it's useful, are there things that we can change to make it more useful, and so, anyway, I will open the floor up for a general discussion. Ryan, please.

OTHER BUSINESS
DISCUSSION OF INTERIM ASSESSMENTS AND SEDAR PROCESSES

MR. RINDONE: Thank you, sir. We were actually just talking about this in the back of the room, and I think I mentioned this yesterday, but I think it's worth adding to Jim's discussion about, you know, from how long out from the terminal year of the last stock assessment do you guys want to be considering the interim analysis as something more than just a quick health check, because, clearly, you know, the further away we move, the stronger, and likely less defensible, some of those assumptions that are made about recent recruitment things tend to get, and, without running that data through the stock assessment again, we're just not going to know, and so just to add that to consideration of that discussion.

CHAIRMAN NANCE: Let me ask. From the Center's perspective, the interim analysis -- We've set that up, and we have an index that we track, and that gives us an indication of where that stock is with that index, and is there any way to just run a quick -- I know there's a lot of changes in an assessment, and is it possible just to run quick assessments? I know that, for each of us, quick is different.

DR. SIEGFRIED: There's some proposals out there for some funding to look at ways to get better uncertainty in our projections and ways to potentially better inform projections, by doing, you know, more uncertainty analyses in our assessments, and, at that point, we would be more confident in projections, and we could do like -- We could consider starting to research like mini-assessments, is what you're talking about.

Right now, I don't think that we have that, and that doesn't actually happen any easier than going ahead and updating an assessment, but, while I have the floor, can I make a few comments about interim assessments?

CHAIRMAN NANCE: Absolutely, yes. Please.

DR. SIEGFRIED: So we don't tend to support these projections past -- You know, three to five years is what we've always here is where we have the most confidence in our projections, and we've seen -- Like red grouper is an example, where we're way past that, and we're using interim, you know, data to update, and so that's not more desirable than doing an interim analysis with an index that's updated yearly, and so we certainly aren't saying to choose projections over an interim analysis, and so that's number one.

The thing that I am concerned about is using interims instead of setting a schedule that includes an update of the assessment that the interim is for, because you could potentially just keep going, especially if we update the OFL and the ABC, and then, if everything is just going on fine, we could potentially provide catch advice and miss some signals in the index, and then be too late to catch a down-tick of that stock, and so I do think it's important to make interims a temporary solution, instead of a permanent solution.

The other thing that I need to talk to our director about is more Science Center direction about, you know, what timeframe we would recommend, based on maybe the life history, or the management goals, for each species, as far as how long to average our index results, because like we were looking at red grouper, and, if there's a down-tick, and then we only use three years, we're going to get a different answer than if we use the five years, and we may not capture some negative trend in the stock the next year, or the year after that, and so I think we still need to do a little bit more work, at the Center, to decide what that timeframe should be, but I don't think we have any hard-and-fast rules of how often the assessment needs to happen versus how often an interim should happen, and those are just concerns that I wanted to convey.

CHAIRMAN NANCE: Thank you, Katie. Josh.

DR. KILBORN: Thank you. I think that, you know, when we think about these questions, we have to remember that each species responds totally differently to the environment, and we've already seen -- I have presented some work to the SSC already, and I'm going to present some more at the next meeting here, looking at some of the periodicity that some of these different species seem to be following that's unexplained in some of the models.

The point is that I think, you know, we don't have a standardized set of rules for this, and we probably shouldn't, because each species does seem to exhibit different responses on these shorter time scales, and so that's one point. The other question that I

have is do we actually have, right now, a list of all of the species that we do these interim assessments for, or interim updates, and what the specific methods that are used for each of them are, so that we can kind of get a sense of what we already do and whether or not we, you know, like what we're currently doing, and then, you know, take that to the next step and see what we might want to do, moving forward? Thank you.

CHAIRMAN NANCE: Ryan, please.

MR. RINDONE: Do we have a list? Yes. Does that list include the methods that are used for each one? No. They're not all necessarily done the same either, and so we've been doing the red grouper one the longest, and I think it's probably at a point where it's been performed the most consistently, because it's just been done the most times, and we did one for gray triggerfish, and we've done a couple of catch analyses for red snapper, and we didn't really call them interim analyses, because they were a little more Frankenstein than that, and I feel like I'm missing one, and we're looking at gag, and that will use the video index.

Gag will be the next one that will have one done, but gag had to wait until the conversion over to SRFS was done and the SPR proxy was selected, and so, now that that's all ironed out, gag can get done, and so the methods, I think, are what are a little bit more variable, but I think the best example was our first example, was red grouper, because it's been done consistently the same way. Now, I think this is the fourth one, or the fifth one. It's the fourth one.

CHAIRMAN NANCE: Thank you. David.

DR. GRIFFITH: Thank you, Mr. Chair. I'm just wondering what triggers your decision to do an interim analysis, and is it sort of environmental problem or some issue?

CHAIRMAN NANCE: Ryan, please.

MR. RINDONE: It could be. With red grouper, like we noted yesterday, when we got SEDAR 61 back, red grouper wasn't overfished or undergoing overfishing, but, boy, it was close, and we know that red grouper has a particular susceptibility to episodic mortality from red tide, and the majority, 99 percent, of the biomass of red grouper in the U.S. EEZ occurs off the west coast of Florida, which is certainly no stranger to red tide events, and it's not if there will be another red tide, but when and how bad, and so that was one of the reasons for doing the annuals for red grouper, was so that we could keep some kind of a pulse on what

was going on, and, by using the NMFS bottom longline index, that targets the larger half of the stock, if you will, a lot of the spawners that were more offshore.

If there was a mortality event associated with red tide, we would see it. If there was a large recruitment event that was leaking its way into that larger, older portion of the stock, then we should see that, too.

With red snapper, it had to do with getting the Great Red Snapper Count data, and then the revision to those data that followed after that. With gray triggerfish, the last gray triggerfish stock assessment was stopped early, because of some data issues, and so, to get some interim advice on that, a representative index of abundance was chosen there, and we got an interim analysis for gray triggerfish, which allowed an increase in catch, and that was corroborated by what we've heard from fishermen about just generally seeing more of them.

Then, for gag, we can't run a full stock assessment of gag every year, as much as we might like to for gag and for red grouper, for some of these species that we're really trying to keep a better eye on, and it's just an extremely labor-intensive process, obviously, and so we'll use the combined video index for gag to get an idea of what's going on with that stock.

CHAIRMAN NANCE: Thank you. David, please.

DR. CHAGARIS: Just kind of a comment about the interim analyses in general, and I've never been, you know, really satisfied with them, because they're so disconnected from the stock assessment and the population dynamics and all the other information we have, and it seems like a way forward would be to tack on data, a new year of data, onto the previous stock assessment.

You don't have to have complete data for all the sources of information, and you can update the landings and the single index and just estimate fishing mortality and recruitment deviations in these interim years, keeping the other parameters fixed.

Now, I haven't done this, and so there may be some reasons why it wouldn't work, but, from where I sit, I feel like that would be a better approach, and something similar was done for yellowtail snapper and presented last year, where they had this interim base model, where it was sort of a partial update, and I would be much more supportive, and interested, to see an approach like that develop, and I understand that, you know, there is workload and efficiency issues, but, I mean, if it takes two months to do an

interim assessment, it seems like we could utilize the stock assessment model more, given two months' time to produce that.

I guess I'm interested in, you know, how the Center thinks -- I mean, I know, in Stock Synthesis, you can add missing data, and you can keep your selectivity parameters, you know, fixed at whatever it was terminal year, and then just see what the model estimates recruitment and fishing mortality in these interim years, and that would give us a lot more information, I think.

DR. SIEGFRIED: One of the things that one of our associates is doing is looking at what you're talking about, Dave, and the thing that we were concerned about though is that, if you fix everything else, how the SSC would accept that, view it, and, you know, there's not a lot of decisions in it, and it's -- You know, we wouldn't have to re-fit all selectivities and all retentions and do all of the assessment work again, and we could just update those few data sources.

It seems a little revolutionary, compared to the level of review that we get for even our simple operational assessments, and so that's doable, but we were -- At this point, we would need to test it and sort of see, you know, under what circumstances it worked and didn't work. I know the South Atlantic is doing -- They're doing some research looking at their own version of an analysis Hyung analysis that Clay and others had worked on to get the original interim, you know, working in the Gulf.

One of the things that they found is that, if anything goes wrong in the stock, the interim doesn't perform well, and that you need other sources of data to actually get a good picture in the model, which is interesting, because red grouper is our poster-child for interims, and Skyler reminds me that it's seven times that she's done a red grouper interim analysis, but what we're doing there, it seems like, is making sure that there's not some sort of negative effect of the episodic mortality on the stock and what would happen in catch advice.

That brings it down to sort of what's your goal? What is the SSC's goal, or the council's goal, in asking for the interim? Is it to, you know, as someone asked, see what happened, based on what happened in the environment, or is it to take advantage of a big year class, and like what is the purpose of it?

Then there's also the delay and the incredible administrative workload that the council staff has to undertake to get the catch advice turned around in a quick way, and so it's a RESTORE project that we hope gets funded, to do exactly what you're talking about.

Fingers crossed, but I want yours to succeed, too.

CHAIRMAN NANCE: Thank you. Will.

DR. PATTERSON: Thanks, Jim. My question was going to be to Katie, about what proposals were in review and what was their approach and objectives, because I think having an MSE that looked at this would be really important, and I think perhaps one way to do it, and, again, I don't know what the methods are in the proposal, is to take, you know, one of these data-rich assessments and, you know, compute for the time series of data and then remove components of data going back in time and seeing how similar the results are, and where you get greater uncertainty, or what's kind of driving that.

I think that would be a useful way to examine, you know, the utility of just updating the catch, and it's not -- You know, you're not fixing everything back in time, but you're just in the forward period, since the last assessment, and you would have to fix the parameters, because the model couldn't fit it, and it just seems to me that -- I agree with Dave that you're still -- The stock dynamics are still in there, but it just doesn't fully reflect the dynamics in the last few years, but it's probably a better approximation of the full range of dynamics in the stock, because you have it built into the model.

The interim analysis, to me, has its greatest utility in the red grouper type of scenario, where there is a red tide that has been observed, and you're looking at an index that you think has important information, useful information, to guess whether the spawning stock biomass is taking a hit or not, but these ideas of chasing strong recruitment, and trying to update catch advice based on an index, you know, that might be slightly going up, that, to me, there's a lot of uncertainty there, and I think the uncertainty in the approach is greater than the potential increase in catch advice, at least in the examples that we've seen.

I think that's not the best way to use this approach. I mean, if you -- It seems, to me, that the interim analysis is most useful to track when you think there's a really negative episodic event or to examine whether you think you need to do an update assessment, because there is something going on that is beyond the scope of the data in the previous assessment.

For many of these species, even ones like red snapper, that, you know, can live to be sixty, a lot of the recreational fishery, in particular, is in small, young fish, three and four-year-old fish, that are barely recruiting to the fishery, and so, you know, the

same thing is true in red grouper, and so if you -- They don't live quite as long, but the same issue of small, young fish, and so, if we're just going to shave down these recruitment pulses, then that goes against the life history of the species.

I mean, we're meant to be getting to higher biomass levels, and so the stock bounces around, and the recruitment deviations are just part of the issue, and we're not chasing them all the time, and so I think that's probably where the greatest value in this approach is, is to suggest when more substantial analysis has to be done, because we perceive there's an issue.

CHAIRMAN NANCE: Thank you. Katie.

DR. SIEGFRIED: Will, the South Atlantic group did the MSE that you're asking about, and that's where the results come from that say basically that it does an okay job if you -- They tested a number of management procedures as well, but that the interim can do a good job if there's nothing episodic happening in the stock, and so I can -- They just presented to the South Atlantic SSC in October, and the publication, I think, is in review, or accepted, but so that research is happening, and that was motivated by the use of interims that the Gulf started, and the South Atlantic started to want to consider, and so I think we can -- I can provide that to this SSC, as a document, and then we can discuss it at the next meeting, or whenever Ryan has time, but, yes, that's exactly what they did.

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

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair. I guess, within the current SEDAR box, we do not have an option to ask for an update assessment right now, and that is my understanding. We can ask for a research track, followed by an operational assessment, and we can ask for an operational assessment, or, outside of the SEDAR process, we can ask for an interim analysis, and so we no longer have these updates available to us to ask for, is my understanding, through SEDAR.

Regarding the yellowtail snapper assessment, I don't think that was really an interim analysis, like we've been using it, and it was updating the data and then rerunning the model, I believe, versus looking at an independent index, or numerous indexes, and then adjusting the catch advice up or down.

On gag, the reason -- Well, I guess there's several reasons we haven't been able to do the interim analysis on gag, but, right now, the council has not selected an allocation or an ABC to

adjust, should that be the case, the ABC up or down, and so that's another thing that we'll have to keep in mind as we're going through this FES or SRFS or what other type of assessments we're putting the recreational units in. We have to have those decisions before the Science Center can conduct an interim analysis.

CHAIRMAN NANCE: Thank you. Katie, please.

DR. SIEGFRIED: Just -- I am probably similarly, or equally, frustrated with the limitations of the types of assessments that are requestable, but the closest thing to an update is an operational assessment with no topical working groups, and so, in the research track operational guidance, that's the closest that we can get to it, but it's certainly not like what Dave, and others, were recommending, where it's a subset, in order to get, you know, some sort of -- It's a little different, to me, than an update. A true update is updating all of the data sources, and it's not just picking the key data that could influence catch advice and fixing all of the other parameters.

CHAIRMAN NANCE: John Mareska, please.

MR. MARESKA: Thank you, Mr. Chairman. I guess I'm just echoing a lot of points that have already been made, but just recommending that, you know, we don't need to look at an interim assessment every year, or two years, just to avoid that tendency to maybe chase some of those high data points, and maybe look at it two or three years, and then I was going to suggest that, if we see some kind of trend, that we request exactly what Dave was talking about, and some kind of an updated operational assessment doesn't sound possible now.

Also, I would suggest something similar to Something's Fishy, or check with, you know, the Reef Fish AP, to see what's going on in the fishery, so we have that outside information to kind of also inform the indices that we see, particularly the fishery-independent index, from the bottom longline. Thank you.

CHAIRMAN NANCE: Thank you, John. Ryan.

MR. RINDONE: I just wanted to comment about the idea of, you know, an operational assessment that didn't have any topical working groups and just remind the SSC that, you know, on the frontend of that is a huge data load to get all of those data that went into that assessment.

DR. SIEGFRIED: Sorry, Ryan, but this was an operational assessment that's supposed to be without topical -- So, like Spanish is coming

up, and that has no topical working groups, and so that’s like the closest that --

MR. RINDONE: Right, but, still, even at the front of Spanish was gathering all of the past life history data and evaluating those, making sure there weren't any changes to those, gathering all of the directed fleet landings, and everything that happens on the frontend of an assessment happens for an operational assessment, regardless of whether there are topical working groups, or regardless of how many there are.

That body of work is part of why these things end up on -- The operational assessments are on the SEDAR schedule, and why we have to work with the Center for budgeting for the amount of time it takes to get all of that stuff together.

So, if we were doing something like just updating the landings, it still requires all the landings to be updated and examined and then input into the model, and then, like Dr. Siegfried was talking about, the follow-up from that, and so it’s not -- It’s not quite as straightforward, but it’s also not to say that, at some point in the future, some of those facets couldn’t be more automated, which the Center has been working on for a number of years now, and has made some progress, and so just food for thought.

CHAIRMAN NANCE: Thank you. Jim.

DR. TOLAN: Thank you, Mr. Chairman, and a lot of things, again, have been covered, and I like to think -- This may be boasting, but I like to think that I have a little bit of an idea of what’s going on within Stock Synthesis, and I will certainly defer to the Science Center folks, as far as what goes on in there, but, in terms of the placement of the indexes into the Stock Synthesis and what is spinning out at the end, unless -- In my mind, unless you have a really good connection between what the index is telling you and what the stock assessment ends up with -- I’ve always been really, really squishy about setting catch limits, or setting management advice, on the backside of just an index.

While I think the solution that Dave brought up would be preferable to -- You know, we may have to set a lot of parameters and just fix them, but, at the end of a stock assessment, we, as a group, are happy with those parameters as they stand now, and so adding more data to it, and getting a better feel for what the data is telling you, to me, is a better idea for setting catch advice than just what’s the index say, and so that’s just my thing, and I’ve always been really uncomfortable with catch advice just out of the index, and so thank you.

CHAIRMAN NANCE: Thank you, Jim. Doug Gregory, please.

MR. GREGORY: Thank you, Mr. Chair. I am reiterating some of this too, and, with the stock assessments, as Jim was talking about, you know, we started out with only fishery-dependent data, and we all know the potential biases with that, and so the holy grail was to get fishery-independent indices that could help tune the stock assessments, and now we have that, which we didn't have in the beginning, but we evaluate, and we see the variability, and the lack of precision, in some of these indices, but we don't worry about it so much, because it's probably the best we can do, but, now that we're at the interim level, where we're actually setting a catch level based on an index, I am more concerned about the lack of precision of the index.

This longline index for red grouper, three data points out of the last twenty years exceeds the confidence intervals of the last ten years, and so we've got such wide confidence intervals that the thing that scares me is we start talking about, oh, the stock went up one year, and it went down year.

With gray snapper, the last year of recruitment was down, and that alarmed some people, and we're chasing our tails, because, statistically, there is no difference between these numbers in the last ten years for red grouper indices, and I don't want to throw the baby out with the bathwater, but I do go along with the idea of use these as a health check, as a heads-up if something might be going wrong, and let's take a closer look at the indices, if we can, and how to maybe improve the precision, but not use it to change quotas year after year.

I understand why we went to interims, and, back then, we had less of a difficulty getting stock assessments than we seem to now, because of the change in the SEDAR definitions, and there are no more updates, and no more benchmarks, and it's all operational and research, but that's a conundrum we're in.

The SEDAR people, and NMFS, have to figure that out, with the councils, but I don't think the interim approach for setting ABC is the answer to having less-frequent stock assessments, and I think this needs to be reevaluated, and I understand the reluctance to try to use the indices to set OFL, and then have the SSC set ABC based on these uncertainties, but that might be even more complicated, and so I think they're good for health checks, but I don't think they're good for setting annual ABCs every two years. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Ryan.

MR. RINDONE: Partially to Doug's and partially to Jim Tolan's points, and, like with red grouper, I mean, I take all those points well, especially since what we're hearing from the fishermen, and seeing on the water, is a lot of younger, smaller fish that likely wouldn't be captured by the NMFS bottom longline survey, and, while we saw overages in the recreational sector for 2020 and 2021, or 2021 and 2022, excuse me, you know, primarily, where a lot of that recreational fleet is operating is in waters that are going to be shallower than thirty meters.

Where the NMFS bottom longline survey is operating is in waters there and deeper, or like at and deeper than thirty meters, and so there's going to be a difference in the length compositions that are observed from the bottom longline, versus what's being observed from what the fishermen are telling us that they're seeing, and so, in part of our messaging, and in talking about these things, that's certainly something to convey.

I think it's also another reason to look at, if possible, more than one representative index, if there's a way to do that, because -- Just like with red snapper, and the NMFS bottom longline survey isn't capturing the younger, smaller red snapper that are present in waters nearer to shore, and so it's a similar issue across multiple species, and so, if there's a solution that could be mapped to that, to try to get a more holistic image of what's going on, then that certainly would be helpful.

CHAIRMAN NANCE: Thank you. Will.

DR. PATTERSON: Thanks, Mr. Chair. Your point is well taken, Carrie, in talking about the sort of box that the council is in to try to get updated advice. I imagine that can be pretty frustrating. It's frustrating for us on this side, looking at the type of science products that we have to review to provide advice to the council, but, you know, I'm wondering, and we've had this discussion before, about whether, you know, it's time to consider not tweaking SEDAR, but like a radial re-envisioning of what the peer review process for assessments are in our region.

The system isn't working, and we've talked about -- I mean, from what I know, the idea of having these research track assessments would be then that you could update the information, and that should be good for a while, maybe five or ten years, depending on the species, but there were folks who were concerned, when that new approach was announced, that it would just cause more delay, and for two reasons, one because there were some thoughts that the

research track process would probably take longer than what was envisioned, and then the second was that there wasn't going to be management advice produced by the research track assessments, but instead then there would be an operational assessment that would follow thereafter.

We got a great product in scamp, and, I mean, it was -- Especially given the data available, and I thought that was a really solid assessment, but it took a long time to produce, and part of it was COVID, you know, that happened in that time period, but now we're looking at red snapper, and the deadline for just the research track, and pulling into that, is being extended and extended, because of, you know, running into issues with model convergence and trying to get different data sources to work together.

Something that complex, of course you're going to run into things that cause delays, and so I just -- I recently was made aware of a council motion, from a few years ago, to totally scrap SEDAR and move forward, and apparently it had a lot of support at the council, and I had never heard that, and I don't know what happened with that, but, you know, I just wonder -- We do think so much differently here than in other regions, and other regions have more throughput, and I don't think it's just the amount of personnel available to do assessments.

It does frustrate me, when we seem to have these sort of bureaucratic, self-imposed handcuffs on what we can and can't do, and that doesn't seem to be very useful, to me.

CHAIRMAN NANCE: Ryan.

MR. RINDONE: Dr. Patterson would absolutely enjoy coming to a SEDAR Steering Committee meeting and seeing the dynamics that are at play there, and it's a -- It's one of those situations where it's a single program that is serving five masters, and six if you include Atlantic HMS. It's the Gulf Council, the South Atlantic, the Caribbean, Atlantic States Marine Fisheries Commission, Gulf States Marine Fisheries Commission for menhaden, and then Atlantic HMS.

It's a behemoth, and, because it has to serve so many masters, it puts it in a situation where what it provides to all, for equity, is less, and so something that was more regionally specific was played with, a little bit, when we had some BP oil spill money, in 2011 through 2013, which is actually how I initially got hired, was being the Gulf's specific SEDAR coordinator and catering to this region.

That did help a little bit, but SEDAR has experienced level funding for a decade at this point, which was a little bit less of a problem recently, because we moved to a more webinar-based approach, but, in general, the services that are available to be provided to all cooperators are limited, in that regard, and they're also limited by the fact that one Science Center is serving all six of those masters, as well as having to participate in ICCAT and other international obligations.

Your point is extremely well taken, and each of the cooperators is very sensitive to it, and has probably had some of the same thoughts at different points, but it is definitely resource limited, at the moment.

CHAIRMAN NANCE: Steven Saul, please.

DR. SAUL: Thank you, Mr. Chair. I think this is a really important discussion. To these points, there is actually -- Before the categories of SEDAR changed, which was I can't remember when, maybe four or five years ago or whenever, and you all can remind me, but we used to actually update the assessments with additional data streams and rerun them.

When I worked for the Center, both as an FTE and an intern, I did that for gag and vermilion, or not gag, but for triggerfish and vermilion, and we've done it for red snapper and other species as well, and, to Ryan's point, I think that I agree, very strongly, that that's the way to go, ideally, in terms of trying to update catch advice and such, particularly because it also maintains a sort of integrated assessment approach that Magnuson advocates for.

To Ryan's point a few moments ago, five minutes ago or so, it's not that simple, because you have to re-crunch the numbers for landings, and, you know, you can just put the landings stream in, and what we used to do is re-estimate everything, landings and catch per unit effort time series and size distributions, and we did not update the assumptions that went into the way that those numbers were used to develop those indices and size distributions, et cetera, and landings, and so we just took the old code and reran it on top of the new data, to update those input streams into the models, and then we would rerun the stock assessment models.

That cannot be done nearly as quickly as these sort of index-based approaches. However, I think that -- I also, as someone else mentioned a few minutes ago, have been pretty uncomfortable with taking one fishery-independent index and applying it to try and develop catch advice based solely on that, and I think we're

probably -- I understand the rationale for doing it, both from a time consideration and also from the episodic event perspective, for sure, but I think it really misses a lot of the dynamics that are going on with the stock, and I think that that's too bad, and I think that we're probably missing information.

I would be curious to have clarification from folks, just to clarify if that change in doing things was -- Is reflected, or is due to, the fact that these types of assessments, or the assessment categories, have changed.

Then I strongly agree with Will's comment, and I think that we do need to reconsider these sort of SEDAR categories of assessment. I realize that imposes probably quite a bit of additional workload on the Center, but I think it would -- In terms of, if they have to update assessments, in the way that we used to do, like I was just describing, but those updated models, I think -- Not I think, but they would provide much more comprehensive advice, with respect to setting, you know, policies and catch limits and such.

The other important point to reiterate is that, as Ryan mentioned, our region is special, compared to the other management regions and the other NMFS Science Centers around the country, in that the Southeast Center is tasked with not only, you know, reef fish in the Gulf and the Atlantic and the Caribbean, but also the highly migratory species, and so, when you look at the staff to workload ratio of the Southeast Center, including the Miami Lab and Beaufort and Pascagoula and Pensacola, et cetera, and you compare that with the other regions, like the Pacific Northwest, or the Alaska Region, certainly, et cetera, the Northeast, those regions have a much more focused, or somewhat more focused, sort of group of species that they're charged with assessing, and they have more staff.

I mean, there's just -- The ratio of workload to staff is different, and so I'm not sure how to get around all of this, but I feel strongly that we should try to get back to a way of updating these models as a way to provide interim advice.

Now, there is a danger in that, which is, if you had these additional years of data, you could destabilize the model, and you hope -- That should not happen, and you hope that does not happen, and, most of the time, it did not happen, but that's also something to be aware of, which could extend timelines and such.

Then, lastly, these sort of -- I'm glad that people are starting to look at these approaches, from a sort of academic perspective, to see what -- To really understand how they function, or operate,

and I think it would be really useful, at some point, for these to be sort of tested against some kind of simulation model, to really see how these interim approaches are performing in comparison to, you know, fully -- To updating existing assessment models with additional years of data.

CHAIRMAN NANCE: Thank you, Steven. Ryan, go ahead, and you'll have the last comment.

MR. RINDONE: Oh boy. I better make it good. I appreciate Dr. Saul's comments, and he's absolutely right about the differences between the Southeast versus other regions, and so some of us, Dr. Chagaris, Dr. Toland, Dr. Patterson, Dr. Nance, and myself went to the National SSC Meeting last August and got to rub shoulders with some of the other SSCs and representatives of some of the other Science Centers, and we got to talk to them and see how a lot of their processes function up there, and they are very different from how things happen in the Southeast and the way that they have some of their scientific work structured.

I think that word is the important part of it, is "structured". In a lot of cases, they're assessing the same species at some certain interval, you know, within every year, or every other year, whatever it is, and that particular Science Center just -- They turn that out, kind of like our Science Center presently turns out the red grouper interim analysis, and they might just automatically do a stock assessment on this crab species, or this bottom fish, or this whatever it is, every year or every other year, whatever it is, and they are --

In a lot of cases, they're in some pretty data-rich environments, if we're talking about like the Pacific Northwest, and the Pacific in general, and the New England area, and so they have a lot of data, and they have more commercially-focused fisheries, and so the uncertainty about the majority of their landings is less, and so it's a little bit less of a lift to crank those assessments out.

They also have more people, and those fisheries are, in some cases, worth considerably more than say the Gulf king mackerel fishery, and so those are some things to consider about the differences.

When we initially transitioned from the benchmark process to the research track process, the goal was to be able to produce much more comprehensive, and just higher-quality holistic assessment products, through the research track process, without it having the same deadlines tied to it that the benchmark process did. The benchmark process was advertised as being able to be done within

about a year, and we were seeing that stretch to fifteen months, or eighteen months, depending on the species and what was involved. Red snapper is in a separate category of its own, obviously.

Then we would do the operational assessments, and the idea was that we could ask for anything in a research track, and then an operational assessment that was supposed to be more streamlined, but new data could still be considered in it, and the operational would encompass both the standard and the update.

In practice, the reality of it is that the council doesn't request an assessment because it has nothing to do, and it's requesting that because there's something specific it wants to know, and it probably wanted to know it yesterday and not two years from now, when the assessment is completed and the SSC has reviewed it and the council can start working on catch advice.

Having that gap between when the science is completed and the management can begin is a continuing problem, and the interim analysis process helped bridge that a little bit, but, like we observed with red grouper at this meeting, there is a limit to how many times you can request one of those before you just get to a point where you guys are not going to be comfortable with it.

The throughput that we were hoping that would be improved through the research track process hasn't been realized yet, but the interim analysis method has proven useful, so long as we're -- Apparently so long as we're not so far out, you know, some distance away, from the terminal year of the stock assessment, and so, when we're thinking about requesting these, I think you guys definitely need to think about that. I think that's what I had.

CHAIRMAN NANCE: Thank you. I will give Carrie the very last word, but, before she -- I just want to thank -- I thought we had a great discussion on that, and there are things that we need to think about as we move forward, and that was a great discussion. Carrie.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair, and so we do have a Steering Committee meeting in February, and so, if there are -- I have taken some notes here, and I will look at the summary, but, if there's a motion, or anything like that, that you want us to carry forward to the council, and then consideration of SEDAR, regarding, you know, reconsideration of some type of update, because of these limitations, perhaps, of the interim analysis, or something like that, I think that could be extremely helpful, or maybe we need to have some agenda time, where we're discussing, you know, research track to interim assessment, which is outside of SEDAR, at some point in the future, but I do think we're going

to be talking about topical working groups, and that process, and perhaps limiting those for operational assessments, which I have mixed feelings about, and so, you know, if this group is ready, a motion could be helpful for us to take to the council, and then to that meeting, if we're ready, or we can consider further discussion.

CHAIRMAN NANCE: Will.

DR. PATTERSON: I think the conversation here has been useful. Katie has just told us about this research that has been completed now in the South Atlantic, who has some very similar issues to us with reef fish, and reef fish assessments, and I know that Ryan has expressed the intention to have sort of regional research updates in the next few SSC meetings, toward the end, and, if I'm not mistaken, Dave Chagaris is going to talk, next time, about some of his red grouper EwE research, and Josh Kilborn is going to talk about the life history stuff that he just mentioned, and I don't know what else is on the agenda, but --

MR. RINDONE: Steve Saul is going to have a discussion about socioeconomic factors and incorporating them into Stock Synthesis is another one, and then Sean is going to talk about greater amberjack discard mortality rates and give an update about the greater amberjack count.

DR. PATTERSON: Okay, but I'm wondering if, with those two, Josh and Dave's research, if we could combine that with the Klibansky et al. research and really focus on this idea of interim assessment and the MSE that's been done in the Atlantic and at least be more informed about what the results of that have been, and take advantage of that work, and then perhaps we would be at a point where we could suggest maybe reconsidering the current approach and provide some positive advice, as far as potential ways to move forward.

CHAIRMAN NANCE: Carrie.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair, and so I think I might have missed the South Atlantic research that you were discussing, but I think that management strategy evaluation -- That's for dolphinfish, and is that what you're referring to? No?

DR. SIEGFRIED: I actually emailed Nikolai, Dr. Klibansky, to ask if he would be willing to present it to this group, and he presented it to the South Atlantic. As a presentation buildup, I think it was snowy grouper, black sea bass, red porgy, and vermilion snapper, and it was to look at the performance of interim catch

advice, and the title is "Evaluating Procedures for Updating Catch Advice of Reef Fishes Between Stock Assessments with a Management Strategy Evaluation". Cassidy led the MSE on dolphinfish, and so they've been very productive on the MSE front.

CHAIRMAN NANCE: Okay. I'm not really sure -- I'm not ready for a motion, and I'm not sure if somebody else is, but I think, from the discussion, Carrie, you can kind of see where we're heading, but, again, thank you for that discussion, and I think this is important, from the interim analysis standpoint, of what we see those doing and how we want to improve our ability to make decisions, and so, with that, let's go ahead and have our last agenda item of public comments. If we have any individuals here, or online, that would like to -- Okay. Let's go ahead and have our public comment section. Bob Zales, please.

PUBLIC COMMENT

MR. ZALES: This is Bob Zales, and I have listened to -- I caught most of this conversation about the whole SEDAR process and everything with that, and that's the first thing that I am going to mention.

I know the council has got an outreach section, and the Fisheries Service has one, but I can tell you all, from my many years of dealing with all this stuff, that, when you think Fisheries Service, you think Fisheries Service is pretty much the same across the board, and clearly it's not, and the average laymen, laypeople like me -- The less you're involved with stuff, you really don't understand how the difference in the Science Center in Miami, versus the Science Center wherever, in Alaska or whatever, or up in New England, how they operate.

People -- As an example, you've got the South Atlantic Council does stuff, and the Gulf Council does stuff, and each does different SEDAR things, and, even though they may work on the same species, they come up with different conclusions.

People don't understand how that happens, because they think that everything is done standardized, and it's clearly not, and so I would suggest that somebody look at putting out some kind of outreach thing to try to explain the differences between the different regions, the different Science Centers, how the different SSCs operate, so that people have a better understanding, because I represent people across the country, and so I've got people on the west coast asking me, well, why do you all do things like that over in the Southeast, and then I've got people here saying why do they do this up in Alaska, and so on and so forth.

It's very confusing to people, because they would think that the service is the service, and, like I said, it's clearly not.

The other thing, and I'm going to reiterate the issue on the red grouper thing, and I sent out an email this morning to the council, because, currently, on the agenda for the next meeting, that starts in a couple of weeks, red grouper is not on there, and we're requesting that a discussion happen, based on the motion you all passed on Tuesday, because, clearly, we have a serious issue with the fact that the recreational sector continues to exceed quotas, and they continue to have excessive discard mortality, and it is adversely affecting the commercial sector, even though they say, oh, we're closing the recreational side.

Well, what you do, when you have excess discard mortality, is you reduce the entire quota for everybody, which means the commercial sector gets punished for what the recreational sector is doing, and that shouldn't be. That's not fair and equitable, and that needs to be looked at, and I don't know if this is something that you all need to put out there for a future discussion or whatever, to see how you can address this, but there is clearly a problem with recreational sector overages, and the fact that they don't have to have a payback with red grouper makes it even worse. That's pretty much all I've got to say. Thank you, all. Of what I listened to the meeting, it was pretty good.

CHAIRMAN NANCE: Thank you. Any questions from the SSC? Carrie, please.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chair. Bob, we will have a discussion of the interim analysis during the council meeting, under the SSC summary. I think that's going to be at the end of the Reef Fish Committee agenda.

CHAIRMAN NANCE: Thank you, Carrie. Michael Drexler, please.

MR. MICHAEL DREXLER: Good afternoon. Thank you, Chair. Thank you for the chance to talk, and thank you for everyone's work at the SSC meeting, and I thought it was a great meeting. I just wanted to chime-in and build on some comments that were made about, you know, some of the concerns maybe about the performance of the interim assessment and where those might fit in a big-picture sense.

There was a suggestion to create a list of kind of what's been done, and how they've been applied, et cetera, so that the SSC can help understand, you know, how effective they are. I think that suggestion is a good one, and, you know, our council is very stock-

specific, which I know is news to no one here, but we don't really have a process step, anywhere in it, to take a cross-sectional look about what's going on, and, you know, there's a lot going on.

There are patterns happening across multiple stocks. You know, I think we've seen this in some of the status shifts in the stocks, these recruitment regime, or production regime, shifts, and all the technical interactions and target switching that's happening.

I would suggest something closer to biennial process, maybe just for interim assessments, would be a really valuable tool for the SSC, to help understand, diagnose, and respond to current conditions in the stocks and for the council to better understand what's happening across all of the managed stocks.

I think, right now, the best synthesis they get is the catch report across all the stocks on an annual basis, and maybe that could be built-out to include things like interim assessments and current status determinations, in addition to catch performance, and so that's just a suggestion, to kind of create a process step to take that big-picture look, and maybe something like that could turn into a more regular specs process that I know other councils do, and some of the east coast councils do take this annual kind of health-cross-sectional check of all their stocks, and so that's something that has occurred, but an interim assessment, and the advice, would be a really great place for that information to land, paired with status determinations, catch advice, and all the other information that's available for stocks that don't have a regular interim update. I appreciate your conversation and work around this, and that's my comment. Thanks.

CHAIRMAN NANCE: Dr. Drexler, thank you. We appreciate you being on, and thank you for your comments. Any questions from the SSC? Okay. Seeing no other public comments, we'll -- Captain Schmidt, go ahead, please.

MR. SCHMIDT: Good morning. I actually wasn't planning on making any comments, but, as you got into the discussion about the interim analysis, and then also some of the comments from Captain Zales regarding how differently the regional councils work, and the different Science Centers, the other night, I was next door, at the ultra-romantic Tampa Airport Westshore Hilton Lounge, and I had a couple of adult beverages with a few of you that are sitting here at the table, and this discussion came up.

It seems that -- I have a lot of friends in the Northeast, and they fish in the groundfish fishery, and their fisheries are managed completely different than the way things happen here at

the Gulf Council, and they have a more timely process, and what I had to say the other night was that -- These were my comments the other day, that we start to see a downtrend, and you do a stock assessment, and stock assessments used to be done a lot quicker than they are now.

It's taking a year-and-a-half or two years to do an assessment, through the SEDAR process, and then, by the time it gets to the council, and then by the time it goes to public comment, and they have their six or seven meetings, then we've already seen an upturn in the fishery.

The other thing is fisheries monitoring. If there is a way that we could improve that, because one of my discussions the other evening was that, you know, we have to wait, in the charter industry -- Sometimes we don't know until May when our season is going to be for red snapper.

Now, we know it's going to open on June 1, but, if I have a customer that calls and wants to book trips on July 22, we have no idea, and some of these people start calling in January, and so, yes, there's a lot of improvement that could be done to the process, and I would imagine, with the advances in technology that are available today, that maybe some of those things could be applied. Thank you.

CHAIRMAN NANCE: Thank you very much for those comments. Any response from the SSC? We'll go ahead and close our meeting, and I appreciate greatly each of you being here and being able to have great discussions, and I appreciate those that are online, and we'll go ahead and close the meeting now.

(Whereupon, the meeting adjourned on January 12, 2023.)

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