## GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

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

Webinar

OCTOBER 4, 2023

## STANDING SSC VOTING MEMBERS

Jim Nance
Luiz Barbieri
Harry Blanchet
Roy Crabtree
Douglas Gregory
Paul Mickle.
Trevor Moncrief
Will Patterson.
Daniel Petrolia
Sean Powers.
Steven Scyphers
Jim Tolan.
Richard Woodward

## SPECIAL ECOSYSTEM SSC VOTING MEMBERS

## Mandy Karnauskas

Josh Kilborn
Steven Saul

## SPECIAL REEF FISH SSC VOTING MEMBERS

## Jason Adriance <br> Michael Allen <br> John Mareska <br> SPECIAL SOCIOECONOMIC SSC VOTING MEMBERS

Luke Fairbanks.
Cynthia Grace-McCaskey.

## STAFF

John Froeschke............................................ . Deputy Director Jessica Matos............Administrative and Accounting Technician Emily Muehlstein........................... Public Information Officer Ryan Rindone...............Lead Fisheries Biologist/SEDAR Liaison Carrie Simmons......................................Executive Director

## OTHER PARTICIPANTS

Lisa Ailloud............................................................... . . . $\operatorname{SEFSC}$
Rob Andrews. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . NOAA
 Katie Fisher..................................................Matlacha, FL
 Bob Zales................................................Panama City, FL - - -
Table of Contents ..... 3
Introductions and Adoption of Agenda. ..... 4
Review of Marine Recreational Information Program Fishing EffortSurvey Pilot Study and Next Steps........................................... 7
Update on SEDAR 81 Sensitivity Runs with Respect to the MRIP-FES
Pilot Study..................................................................... 47
Other Business ..... 60
Gag Fishery Impacts ..... 60
Public Comment ..... 61
Adjournment ..... 66

The Meeting of the Gulf of Mexico Fishery Management Council Standing and Special Reef Fish, Special Socioeconomic, and Special Ecosystem Scientific and Statistical Committees convened via Webinar on Wednesday, October 4, 2023, and was called to order by Chairman Jim Nance.

## INTRODUCTIONS ADOPTION OF AGENDA

CHAIRMAN JIM NANCE: Good morning. My name is Jim Nance, and I am the Chair for the Scientific and Statistical Committee for the Gulf of Mexico Fishery Management Council. We appreciate your attendance at the webinar and input in this meeting. Representing the council is Dale Diaz.

Council Staff in attendance include Carrie Simmons, John Froeschke, Ryan Rindone, and Jessica Matos. Notice of the meeting was provided to the Federal Register and sent via email to subscribers of the council's press release email list and was posted on the council's website.

Today's meeting will include the following topics. We're going to review the MRIP-FES pilot study and discuss next steps, and then we'll review the SEDAR 81 sensitivity runs with respect to the MRIP-FES pilot study, and then we'll have also public comments and any other business.

This webinar is open to the public and is being streamed live and recorded. A summary of the meeting and verbatim minutes will be produced and made available to the public 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 line. Since all of us are online today, Jess will be putting up the names, so we can track who would like to speak, and so, Jessica, we'll go ahead and start that process, please.

MS. JESSICA MATOS: Luiz.
DR. BARBIERI: Luiz Barbieri.

MS. MATOS: Harry Blanchet.
MR. HARRY BLANCHET: Harry Blanchet.
MS. MATOS: David Chagaris. Roy Crabtree.

DR. ROY CRABTREE: Roy Crabtree.
MS. MATOS: Doug Gregory.
MR. DOUG GREGORY: Douglas Gregory.
MS. MATOS: David Griffith. 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: Daniel Petrolia.

DR. DANIEL PETROLIA: Dan Petrolia.
MS. MATOS: Sean Powers.
DR. SEAN POWERS: Yes, I'm here.
MS. MATOS: Steven Scyphers.
DR. STEVEN SCYPHERS: Steven Scyphers.
MS. MATOS: Jim Tolan.

DR. JIM TOLAN: Jim Tolan. Rich Woodward.
DR. RICH WOODWARD: Rich Woodward.
MS. MATOS: Jason Adriance.

MR. JASON ADRIANCE: Jason Adriance.
MS. MATOS: Mike Allen. John Mareska.
MR. JOHN MARESKA: John Mareska.

MS. MATOS: Luke Fairbanks.
DR. LUKE FAIRBANKS: Luke Fairbanks.
MS. MATOS: Cindy Grace-McCaskey.
DR. CINDY GRACE-MCCASKEY: Cindy Grace-McCaskey.
MS. MATOS: Jack Isaacs. Mandy Karnauskas.
DR. MANDY KARNAUSKAS: Mandy Karnauskas.
MS. MATOS: Josh Kilborn.
DR. JOSH KILBORN: Josh Kilborn.
MS. MATOS: Steven Saul.
DR. STEVEN SAUL: Steve Saul.
MS. MATOS: Dale Diaz.
MR. DALE DIAZ: Dale Diaz.
MS. MATOS: Thank you.
CHAIRMAN NANCE: Thank you, Jessica. We've each taken a look at the agenda. Do we have any other items that we would like to discuss in Other Business today?

MR. GREGORY: Mr. Chair?
CHAIRMAN NANCE: Yes, Doug, please.
MR. GREGORY: I would like to briefly revisit the discussion about the potential impacts of a one-fish bag limit with the recreational gag fishery. It shouldn't take very much time.

CHAIRMAN NANCE: Okay. We can add that to Other Business, Doug.
MR. GREGORY: Thank you.
CHAIRMAN NANCE: You're very welcome. Any other items of Other Business that we would like to add today? If there are no other items, is there any opposition to adopting the agenda with that additional item? Hearing none, the agenda is adopted.

Publicly, I would like to thank for last week and for running such
a great meeting, and $I$ appreciate all of your input. It looked like a great meeting that $I$ was not able to attend. Ryan, let's go ahead, and we're going to do Item Number III, which is Review of the Marine Recreational Information Program Fishing Effort Survey Pilot Study and Next Steps, and Dr. Rob Andrews is going to do that for us, and, Ryan, could you please take us -- Beginning with the scope of work for that item?

## REVIEW OF MARINE RECREATIONAL INFORMATION PROGRAM FISHING EFFORT SURVEY PILOT STUDY AND NEXT STEPS

MR. RYAN RINDONE: Sure thing. We had Dr. Evan Howell listed on here on as presenting this, but today we have Dr. Rob Andrews from the same office, from the Office of Science and Technology, and he's going to present the findings of the recent Marine Recreational Information Program's pilot study into the Fishing Effort Survey.

The pilot study discovered the presence of telescoping bias in FES, whereby the order of questions regarding the frequency with which a respondent went fishing within a prescribed time period resulted in an overestimation of overall fishing effort and, thus, landings.

This overestimation, generalized across regions and species, was estimated to be approximately 39 percent for the private vessel mode and 32 percent for the shore mode, and so Dr. Andrews is going to detail a follow-up pilot study, and it's going to be more comprehensive, across all regions and multiple species, and it will be conducted throughout 2024, across all MRIP waves, and the anticipated peer review process will follow in 2025, after the pilot study is completed, and the next steps planned by the NOAA Office of Science and Technology. You guys should review the information presented and make recommendations to the council, as appropriate. Mr. Chair.

CHAIRMAN NANCE: Thank you very much, Ryan, and, Dr. Andrews, we're appreciative of you taking your time to be here and present this to us today, and so we'll go ahead and turn the time over to you.

MR. ROB ANDREWS: Good morning. Thank you. Good morning, everyone. My name is Rob Andrews, and I'm with the NOAA Fisheries Service Office of Science and Technology, and I'm part of the Marine Recreational Information Program. This morning, I'm going to discuss work that we're recently completed to evaluate measurement error in the MRIP Fishing Effort Survey and as well as describe our planned next steps based upon the results from this work. Just one point of clarification, and it's just Mr. Rob

Andrews, and it's not Dr., although I appreciate the sentiment.
It's common practice for government agencies and survey organizations to evaluate data collection methods and develop new or improved methods to ensure the quality of the data and the estimates. MRIP maintains an active research program, consisting of agency staff and statistical consultants to continually evaluate data collection designs for all MRIP surveys.

We recently published a report describing studies that evaluated measurement error, or reporting error, in the FES, and the report is organized into two sections, and the first section is a manuscript comparing one and two-month reference periods, and the purpose of that study was to evaluate recall error in the FES, and the second section is a report describing the effects of question sequence, or question order, on the reporting, and I believe everybody should have access to that report, and $I$ think it was linked to in the agenda, and you can also access it by clicking the link in the presentation, if you haven't seen it already.

Collectively, the studies compared responses to different versions of the survey questionnaire that were evaluated during questionnaire development, when we were initially testing the FES design, and it examined the effects of the length of the reference period, and it examined the order in which survey questions were presented on the reporting of fishing activity.

I am generally going to present the results in chronological order, with respect to when the different studies were administered. However, this may not reflect the order in which the analyses were actually completed. For example, some of the analyses may have addressed secondary objectives from a study that were revisited to help explain results from subsequent studies.

At the outset of FES development, we tested several versions of the questionnaire, with the goal of maximizing response of the overall household population and minimizing the measurement for recall error. The designs we tested differed in everything from the number and type of non-fishing questions, the wording of the fishing questions, and the survey title and pictures on the survey cover.

Also, during this period, we completed cognitive interviews with individual participants, to identify questionnaire items that might cause confusion or result in inaccurate responses, and this included an evaluation of the survey, individual survey questions, and the instructions, to make sure that everything was clear.

During early 2013, we tested two versions of the questionnaire that differed in the number of reference or reporting periods, and one version, which is the version on the left, Question Number 11 -- It included just a single two-month fishing period, and we asked only about a single two-month fishing period. The other version asked about four discrete periods, including the two-month wave, and so that's the version on the right. You can see that the top question there asked about shore fishing in March and April, which in this case was the reference period of interest, and then four additional time periods.

This version on the right is an example of the bounded design, with a primary reference period, and so, again, March and April in this case. It is bounded by additional reporting periods, and so, in this case, the bounding period follows the reference period, and so we asked about the reference period first, and then that's followed by several additional periods, which are the bounding periods.

Bounding has been demonstrated, in other studies, to reduce recall error, specifically telescoping error, which is the displacement of events in time, and the primary type of telescoping error that we're concerned with is referred to as forward telescoping, which occurs when respondents perceive events as more recent than they actually occurred, and it results in overestimates of activities and events. We evaluated the effects of bounding by comparing reported fishing activity between these two designs.

These results are presented in Table 2 of the question order report, and, again, this is the second section of the measurement error report. For fishing prevalence, which is the percent of households that reported fishing during the reference wave, the differences between questionnaires were systematic and significant, in several cases, and so this column on the left is fishing prevalence for the unbounded design, and so that's when we just asked about the single question, and the field on the right is the fishing prevalence for the bounded design, and the results are reported by fishing mode, and so the top boxes are the shore prevalence, and the bottom boxes are for the boat prevalence.

With the exception of shore fishing in Florida, the bounded design resulted in lower estimates than the unbounded design, and a likely explanation for this observation is the bounded design, which provided additional opportunities for respondents to document their fishing activity, reduced telescoping of trips into the reference period.

We implemented the bounded design that included four reference
periods for several successive waves. This provided independent estimates for fixed waves that varied in the length of the recall period and question order, which allowed us to evaluate the collective effects of these variables on reported fishing activity, and here you can see -- This is, again, the bounded design, and the reference periods were presented in reverse chronological order, with the most recent period presented first, and so we asked about the days of fishing in March and April, followed by the days fishing in January and February, and then the days fishing for two successive four-month periods.

What this did is it gave us independent estimates for fixed waves, and so you see here this -- In the bottom figure, the first administration of the survey, which is represented by this top row, produced an estimate for Wave 3 that immediately preceded the data collection period, and so the hatch boxes here is the data collection period, and so Wave 3, the reference period, immediately preceded the data collection period, and, in this instance, Wave 3 was the first question in the question order.

In the next administration of the survey, we also asked about Wave 3, but it was further removed from the data collection period, and it had a longer recall period, and, in this case, it was a fourmonth recall period, and Wave 3 was the second question in the question sequence, and so we could look at the effects, the combined effects, of the recall period for the duration between the data collection period and the reference period and the question order.

Here you see the results for these comparisons, and these are presented in Table 3 of the question order report, and the prevalence estimates, again, the percent of households that reported fishing during the wave, derived from the two-month recall period, and so here you see the two-month recall period for shore fishing and for boat fishing, and so the estimates derived from the two-month recall period were larger than those derived from the four-month recall in about two-thirds of the comparisons, and so, again, the two-month recall period, in addition to being a shorter recall period, and this was the first question that was asked in the sequence, and so these differences could be the result of the different recall period lengths or the order in which the questions were presented.

The larger estimates generally coincided with the shorter twomonth recall period, which is also the first question, and so anglers may be forgetting about trips that occurred further back in time, which is likely to increase as recall period increases. The further back in time events are, the less likely you are to
remember them, and that's referred to as omission error, or anglers could be telescoping trips into the first reporting period by reporting out-of-scope trips at the very first opportunity, the first fishing question. This would be despite the inclusion of the bounding periods following the reference period.

Now, from this analysis, we can't disentangle omission error and telescoping error, but one of those seems to have an effect on the reporting of fishing effort, or both.

What were the key points from this questionnaire development analysis? First of all, bounding of the desired reference period against other time periods resulted in lower estimates than an unbounded design, and so asking about more reference periods, and not just a single reference period, resulted in lower estimates. Estimates were higher when the length of the recall period was shorter than when the reference period was presented first in the question sequence, and so, again, this could be because anglers were forgetting trips further back in time, which is referred to as omission error, or reporting trips at the first opportunity, which would be an example of telescoping error, and, again, this analysis can't disentangle the effects.

Cognitive interviews we conducted during this period suggest that anglers want to be identified as such, and they're eager to report fishing activity, and so cognitive interviewing is we're sitting down with anglers in a one-on-one environment and asking them to complete the questionnaires and going through each question one-by-one, to kind of go through, or determine, their thought process as to why they answered the way they did, and it was very clear that anglers really wanted to report fishing activity, and they wanted to be identified as anglers.

This questionnaire testing and cognitive interviews informed the current design of the FES questionnaire, which includes a twomonth recall period, followed by a twelve-month bounding period. Now I'm going to switch gears a little bit and move on to the next study, which was an evaluation of one-month waves.

DR. KILBORN: Can I ask a question before we move on, Mr. Chair?
CHAIRMAN NANCE: Yes, certainly. Thank you.
DR. KILBORN: I am curious. On a couple of those tables that you showed, on I want to say Slide 4 and Slide 6, where you're showing all the difference between the two different survey results, and, in almost all cases, the $P$ values are not significant, and so I'm trying to kind of wrap my head around -- So, on this table that
you're showing, the shore prevalence had mostly insignificant $P$ values, but, on the other table, on page 6, almost everything was an insignificant difference.

MR. ANDREWS: Right.
DR. KILBORN: So I just wanted to -- Can you talk about that a little bit? Why are we kind of proceeding as if those are real differences, when, statistically, they might not be? Can you touch on that, please?

MR. ANDREWS: Yes, sure. Thanks, and I appreciate the question. It's more the systematic nature of the results than the significance between the treatments. Some of these comparisons were limited in sample size, which I believe explains some of the lack of significant differences, and it also is why we're -- I will talk a little bit more at the end of the presentation of why we're proceeding with a follow-up study.

This was an example that -- I had mentioned at the outset that I'm presenting this information in chronological order with respect to when the studies were completed, but a lot of this work, or analyses, that $I$ went back to after we got results from the question order experiment, to try and help explain some of the results from the question order experiment, and so these are not really the primary focus of the studies that were completed, but they are more to support the results from the question order experiment, and I will talk about that a little bit more further in the presentation, but $I$ think what's important, in this case, is the fact that the differences, in a lot of cases, were systematic. In some cases, they were completely systematic, and so always in one direction, although that's not always the case.

DR. KILBORN: Thank you.
MR. ANDREWS: Yes, and we can come back to that afterwards as well, and as I get to the results of the question order experiment.

DR. WOODWARD: Just one follow-up on that, real quick, and, on Slide 6, the boats, the results on the boats columns, were very different from the shore columns, and so maybe you can discuss why you think we're seeing more consistent recall in the boats question than in the shore question, but I guess you will probably get to that later. Thanks.

MR. ANDREWS: Yes, and, if $I$ don't, remind me at the end, and $I$ will -- We can come back to that.

CHAIRMAN NANCE: Okay. Thank you. Go ahead, Rob.
MR. ANDREWS: Okay. Thanks. The current FES design asks respondents to report fishing activity for a two-month reference period, and that is the questionnaire that's on the left on the slide. We explored reporting error in the FES by testing two experimental questionnaires that differed in the duration and presentation of the reference period.

One questionnaire, which is treatment one on the slide, asked about fishing activity for the two individual months of the wave, with the months presented in chronological order, and so we first asked about, in this example, shore fishing in June, and then shore fishing in July, and then shore fishing in the prior twelve months.

This is another example of a bounded design, but, in this case, the bounding period is presented before the reference period, and so, in this case, the reference period would be July, but that is preceded by a question about fishing activity in June, and then, for this treatment, we also included the twelve-month question, and so it had bounding questions on both ends of the -- Both before and after the primary reference period.

The second questionnaire, which is Treatment 2 on the far-right on the slide, asked about fishing during a single month, followed by the twelve-month effort question, and this is similar to the FES design, except, instead of asking about a two-month period, it asks about a one-month period. This is also a bounded design, but the nature of the bounding is different from Treatment 1, in both the duration of the bounding period and the placement of the bounding period. In Treatment 2, the bounding period follows the reference period.

The primary objective of the study was to evaluate recall error in the FES, specifically omission error, by comparing FES estimates to experimental estimates derived from a shorter recall period, and we wanted to determine if respondents were likely to forget about trips taken during the two-month reference period. The twomonth reference period would include trips that were taken further back in time, and so there was some concern that people would not remember trips further back in time, and they would be underreporting fishing activity.

The study also allowed us to evaluate the effects of bounding, as well as the effects of question order in the recall period on -The recall period length on estimates derived from the experimental questionnaires, and so, again, here you can see the differences between the questionnaires.

The FES questionnaire on the left asks about a two-month recall period, July and August, and the questionnaire on Treatment 1 asks about the two individual months separately, June and July in this case, and then Treatment 2 just asks about the single month, and so July.

The comparison between FES and experimental estimates demonstrated that FES estimates were systematically lower than the Treatment 2 estimates, and so here you can see the --

MR. RINDONE: You said lower, and did you mean larger? The bullet says "larger".

MR. ANDREWS: FES estimates were -- Sorry. They are systematically the --

DR. KILBORN: They're the black bar on this.
MR. ANDREWS: They are systematically lower than the $T 2$ estimates. Sorry. That bullet is incorrect. They're systematically -They're larger than $T 1$ estimates, but they were lower than $T 2$ estimates.

MR. RINDONE: Okay.
MR. ANDREWS: FES is the black bars on the graph, and $T 2$ are the gray bars, and so the FES was systematically lower than $T 2$ estimates. Sorry. I am getting my T's screwed up now, and so T2 is the version that asks just about a single month, and so it includes just a single month, with the twelve-month question after the one-month reference period, and so this could indicate that respondents were forgetting about trips taken during the longer two-month recall period, suggesting that the FES is susceptible to omission error.

However, FES estimates were similar to, if not slightly higher, than Treatment 1 estimates, which were also derived from the onemonth recall period, and so, here, FES, again, are in black, and the T1 estimates, which ask about the two individual months separately, are the white bars, and the FES are either larger than -- Well, actually, in one case, they're smaller than, but they're more similar to the $T 1$ estimates than the $T 2$ estimates. If anglers were omitting trips from the FES, we would expect FES estimates to also be lower than the T1 estimates, and they're not.

The $T 1$ estimates are also systematically lower than the $T 2$ estimates, and the differences are significant for Florida, and so
this is a comparison between the gray and the white bars. The gray is Treatment 2, and it's only asking about a single month, and the white is Treatment 1, which asks about the two months separately.

The recall period for these two treatments is the same, and so the differences are not likely the result of omission error. They have the same recall period, and so we wouldn't expect anglers to be forgetting about trips further back in time in one treatment than the other. The more likely explanation is that respondents are telescoping trips into the reference period in $T 2$, resulting in overestimates. Including bounding prior to the reference period seems to produce telescoping error in Treatment 1.

It's also well established in the survey literature that telescoping error increases for shorter reference periods, and so the longer FES recall period may be less susceptible to telescoping error than a one-month reference period, despite the similarities in design between FES and Treatment 2, and that would be including the twelve-month bounding following the reference period. This is supported by similarities between FES and Treatment 1 estimates.

As with the study that $I$ described earlier, during questionnaire development, Treatment 1 provided independent estimates for fixed months that differed in question order and recall length, which, again, allowed us to evaluate the impacts of these variables on estimates. The key difference between this and the previous study is that the reference months were presented in chronological order, and so the month that was presented first in the question sequence had a longer recall period, and so, in the little snapshot of the questionnaire here, you can see that we first asked about fishing in July, and then about fishing in August, and so the most recent period was asked second, in this case.

Again, looking at the figure below, an example for July, this provided two independent estimates for July. In the first administration, July, which is the reference month, immediately preceded the data collection period, which occurred in August and September, and so it had a shorter recall period, and it was the second question asked in the question sequence. In the next administration, July was further removed from the data collection period, and so, in this case, it had a two-month recall period, and it was the first question that was answered, or the first question that was asked.

These both are presented in Table 4 of the question sequence report. Estimates derived from the longer recall period, which is Month 1 in this case, which was presented first in the question
order, were systematically larger than estimates derived from the shorter recall period, and so this is every single case, and we did twelve comparisons, and estimates of fishing prevalence, which is the percent of households that reported fishing, were larger in the longer recall period in the question that was asked first.

With respect to the recall length, this is the opposite of what we observed in the questionnaire development study, where estimates derived from the shorter recall period were larger, and so, while we can't eliminate omission error as a source of bias, this result suggests that question order is the primary effect response that could be observed differences. It does not appear that respondents are forgetting about trips that occurred further back in time.

This suggests that respondents may be inclined to telescope trips into the first reference period presented on the questionnaire. This is additional evidence that bounding may be more effective at reducing telescoping error when the bounding questions precede the reference period.

The key points from the one-month wave study are that bounding reduces estimates, and is likely more effective at reducing telescoping error when bounding questions precede the reference period. The two-month FES reference period may mitigate some telescoping error relative to shorter reference periods. Estimates were higher when the recall period was longer and when the reference period was presented first in the question order, which suggests that question order has a greater effect than recall length, and so we believe that telescoping error is likely to be the predominant source of measurement error, rather than omission error.

The final project that $I$ will discuss was designed specifically to evaluate the effect of question order on reported fishing activity for two-month waves. The current FES questionnaire first asks respondents to report shore fishing activities, followed by boat fishing activities, and so the FES questionnaire is the panel on the left, and we first asked about shore fishing, and so that's shore or private boat, and it asks -- Within each fishing mode, it asks about fishing in the two-month wave and then the twelve-month period, and so that's kind of the notation at the top of each of these panels, and so the version on the left is the FES questionnaire.

The three experimental treatments looked at -- They tested all permutations of the mode order and the two-month and twelve-month question order, and so we asked about shore fishing first, twelvemonth question first, and then we asked about private boat fishing,
the two-month question first and then private boat fishing the twelve-month question first. Then we compared estimated trip information for all four of the questionnaires.

For both fishing modes, estimates were highest when the fishing mode was presented first in the order and the two-month question preceded the twelve-month questions. These estimates were significantly higher than the other estimates, and so, in this scenario, the bounding followed the reference period, and so, in the table on the screen, the gray columns are the columns in which the two-month question precedes the twelve-month question.

Shore prevalence, which is the top row, this estimate in the first cell is significantly higher than all other estimates for shore fishing prevalence. Similarly, for boat prevalence, when boat fishing is asked first, and the two-month question is asked first, that estimate of boat fishing prevalence is significantly higher than the estimates from any of the other questionnaires.

Within the two-month and twelve-month question order, estimates were significantly lower when the mode was presented second, and so, again, just looking in the gray columns here, and the shore prevalence -- The estimated prevalence was lower when the private boat preceded the shore fishing question, and so this estimate was significantly lower than this estimate, and then we see the same thing again for boat prevalence. When shore fishing preceded boat prevalence -- When the shore question preceded the private boat question, the estimate was lower than the opposite, and that was within the two-month and twelve-month sequence.

The mode presented -- The first mode presented in the mode sequence may provide a bound against which reporting for the second mode is based, reducing telescoping error for the second mode, and mode order is not a significant effect when the twelve-month question precedes the two-month question, and so these are the figures in white. For shore fishing, the estimated -- For both shore and boat fishing, estimated prevalence is not significantly different for these two comparisons when the twelve-month question precedes the two-month question, regardless of the mode sequence.

The twelve-month question provides an effective bound for reporting two-month fishing activity, regardless of the mode sequence, and so that's when the twelve-month question precedes the two-month question.

The key points from the question order experiment are the order of the two-month and twelve-month questions has a stronger effect on effort reporting than the mode order, and it was the strongest
predictor of fishing activity. Presenting the twelve-month trip question prior to the two-month question resulted in lower effort estimates, and, again, we believe the twelve-month question provides an effective bound for the two-month question, reducing telescoping error and likely resulting in more accurate estimates of fishing activity than the current FES design.

Then just a quick summary of the overall key points from the three different studies, and, first, telescoping error is likely the predominant form of measurement error in the FES. Omission error, or respondents forgetting trips, is likely outweighed by a tendency to overreport fishing activity. Bounding the reference period against one or more additional periods is likely to reduce telescoping error, and bounding seems to be most effective when the bounding period precedes the reference period.

Based upon the early questionnaire development studies, providing bounds after the reference period is likely to reduce telescoping error, but not to the extent preceding the bounding question, and then, finally, implementing a more effective questionnaire design, that reduces measurement error, will likely result in lower estimates.

Why do we think the pilot study estimates are more accurate than the current FES estimates? First of all, from cognitive interviews, we know that people are often passionate about fishing, and they want to be identified as anglers. Reporting fishing activity, even if outside the scope of the survey, provides an opportunity to be identified as an angler. During cognitive interviews, participants expressed frustration when questionnaires did not include time periods that coincided with their fishing activities, and so we suspect that the desire to be identified as an angler provides motivation for reporting out-of-scope trips, and this would be a form of telescoping error.

In addition, studies of telephone surveys have found that bounding, in the form of asking about longer periods before the reference period, reduced overreporting of validated medical procedures, and the mechanism for this remains uncertain, but the initial reporting period may enhance memory, by conveying the need for greater precision or satisfy a need to be helpful or associated with the survey topic, for example by identifying as an angler.

Then, finally, the revised questionnaire may result in fewer illogical responses compared to the current questionnaire, and, specifically, fewer respondents reported more trips during the two-month wave than the twelve-month period, when the question order was reversed, suggesting the responses were more accurate,
and so there is more errors -- There is more illogical responses in the current FES design when the two-month question precedes the twelve-month question.

Then, finally, why didn't we implement the new questionnaire in the first place? First of all, the FES questionnaire is based upon a standard practice of asking easier questions first and then proceeding to more difficult questions. This can reduce respondent frustration, and, subsequently, increase data quality and reduce non-response, by easing into more challenging question. It was our determination that providing a number of fishing trips should be easier for a two-month period than a twelve-month period, and so we asked that question first.

As $I$ noted earlier, results from pilot studies suggested that including one or more additional time periods reduced error reporting, even if the additional periods followed the reference period, and so we knew the bounding would result in lower estimates, and we suspected that that was because telescoping error was reduced, and so we thought that the version that we went ahead with, asking the bounding question following the reference period, was successfully reducing telescoping error.

Then, finally, the design was developed in collaboration with a team of survey methodologists and peer reviewed by the National Academies, as well as a panel of experts from the American Statistical Association, and none of the reviews identified question order as a likely source of bias for a mail survey. Generally speaking, the research on question order and bounding is focused on interviewer-administered surveys, and I think there's little research on telescoping on -- Or omission error in a mail survey, or question order in a mail survey, and kind of the thought has been that it would be less of an issue in a mail survey, where you can see the entire questionnaire, than in a telephone survey or a face-to-face survey.

In terms of next steps, we have determined that a follow-up study is necessary to gain a clear understanding of the differences in effort estimates between the current design and a revised design that changes both the question order and increases the frequency of sampling.

This study will include one full year of benchmarking, and that includes a revised questionnaire, as well as one-month sampling and reporting, and we believe this is a logical next step that will allow us to evaluate the interaction between the two variables, the question order and the one-month wave. It also will have much larger sample sizes than the previous pilot study,
which will help us gain a clearer understanding of the mechanisms that result in different estimates.

Then, finally, the existing FES calibration, which was developed as we transitioned to the FES from the mail survey, would be updated to account for the new design changes. This work has already started, using existing pilot study data, and it will continue, as needed, into 2024 and 2025, depending on the results from the follow-up study.

Full implementation of an approved FES design would occur no earlier than 2026, and it would be dependent on a variety of factors, including successful completion of the follow-up study and calibration updates, a favorable peer review and updated FES transition plan, and fully-calibrated historic time series of catch and effort estimates. With that, I am happy to take any questions.

CHAIRMAN NANCE: Thank you very much, Mr. Andrews. We appreciate that presentation. So that I can see names, Jess is going to have take control back, and so, if we want to flip back and forth to slides, that may be -- We may have to do a little process. Dan, please.

DR. PETROLIA: Thank you, Mr. Chair. Thank you, Rob. This is very, very informative, and so what I think I'm seeing is that, in both studies, the published one and the working paper, is that, generally, a bounding question being placed before the reference question works better, but, in the published paper, the bounding question was the prior month, whereas, in the working paper, the bounding question was the prior twelve months, and I see it's probably hard to compare them, because the time periods were different for the two studies, but, moving forward, does it matter which bounding question you use, whether you use twelve months or one month?

MR. ANDREWS: That's a great question, and so the follow-up study is going to include the twelve-month question first, and then two single months, and so we're going to find out how big of an effect that has, and that's one of the reasons that we want to complete the pilot study, or do the pilot study, for entire year, is to try and determine if the combined effects of the question order and the one-month wave, as presented as two separate months, what effect that will have, and so some of that is to be determined.

I think, going into the pilot study, the hypothesis will be that the twelve-month question, the twelve-month bounding period presented first, will absorb telescoping error, and then we'll do
some of the comparisons, looking at whether the month was presented first or second, similar to what we did with the historical data, to see if we get two different answers, for example, for June, whether that month was presented first or presented second, and so we'll be redoing a lot of the same analysis again to try to answer that question.

MR. PETROLIA: Can I ask a follow-up?
CHAIRMAN NANCE: Yes, please, Dan. Go ahead.
DR. PETROLIA: Can you clarify -- So will the design be a clean -- One version will have the prior twelve months as the bounding question, and another version will have the prior month as the bounding question, or are you saying those will somehow be combined in one version?

MR. ANDREWS: So one version will be the existing FES.
DR. PETROLIA: Right.
MR. ANDREWS: So you have the two-month question and then the twelve-month question. We're only testing one other version, and that will have the twelve-month question and then the two individual months, and so we're not doing a third version that has the two individual months followed by the twelve-month question.

DR. PETROLIA: Okay, and I'm just curious of the decision there, because, in the published paper, you seemed to get pretty good results when you used simply the prior month as the bounding question, and why was the decision that the twelve months is the way to go?

MR. ANDREWS: Well, so what we want to do is we want to be able to use information from both of the months in our estimation, and we don't just want the first month to be a bounding period, and we would also like to use that in producing estimates, because it will provide more data, which will result in more precise estimates, and so, if it turns out that the twelve-month question is an effective bounding question, and it reduces telescoping error in the two individual months, then we'll be able to use all of the data that we're collecting to produce estimates.

DR. PETROLIA: Okay. Thank you.
CHAIRMAN NANCE: Trevor, please.
MR. MONCRIEF: Rob, I appreciate you giving this talk and kind of
going over all this stuff, and, from the paper itself, and it was kind of along Josh's question, and it talked about kind of the differences that were observed, and I noticed that there were significant differences and not significant differences between months, for both shore and boat prevalence, and do you think that was a sample size thing, or do you think there is some temporal effect that might be occurring in those lower-traffic waves, because you have to do a little bit more work to kind of get through that?

MR. ANDREWS: Thanks, Trevor. I guess, going back to the question that was asked initially about the significant differences versus the systematic differences, those analyses on the older historical data -- I completed those after we got the results from the question order study, and so the question order study showed pretty clear results, and there were significant differences among the questionnaires that we tested, and that study was designed specifically to evaluate the impacts of mode order and the twomonth and twelve-month order on estimates, and so the sample sizes supported that.

Some of the older work we did, when we were first testing the FES design, I was able to go back and utilize some of that data to try and tease out why we saw the differences in the question order experiment, but that wasn't the primary objective of the study, and so I think a lot of the lack of significant differences was just because we were doing a secondary analysis, and we just didn't have the sample size to support the analysis.

To answer your question, I don't know that we had, on a wave-bywave basis, enough samples in the question order experiment to look at the seasonal effects for the three waves where we conducted the study.

Because we're -- In the sample size, and it was lower than the FES sample size that we did for the question order study. In the follow-up study, actually every month is going to have the same sample size as the corresponding FES wave, and so the January sample size will be the same as the Wave 1 sample size for the FES, and February will be the sample size as the Wave 1 FES, and so the sample sizes will be much larger, and it will allow us to tease out, we believe, any temporal effects that may be related to this.

Just thinking kind of hypothetically, you could think there would be a seasonal effect if, in more active waves, or more active periods, the probability that a respondent did fish is probably higher, and so they would have an opportunity to report accurately,
and identify themselves as an angler, rather than needing to telescope trips into the reference period, if that is indeed the mechanism that is resulting in the telescoping error, whereas, in a lower-activity wave, I might receive the survey in January, but I only fish in the summer, and it's less likely that $I$ fish in January than in the summer, but I'm going to tell you about trips in January anyhow, because $I$ want to identify as an angler.

You know, thinking hypothetically, you could talk yourself into believing that there might be some seasonal effect, and the followup study should be able to measure that.

MR. MONCRIEF: That was perfect, and I was kind of going down that road, of like you had anglers that, in August or September, right, and they might take it and basically go back in time to June and July, and basically just, you know, either make themselves think -- Or to write something down that's positive, and so, essentially, basically, like you said, and, yes, I fished most of the time in June and July, and I want to make sure that's accounted for, that kind of thing, and so that answered my question.

Then I've got one that's just general, and do you want to save like the larger stuff, about the path forward, until after we go over the other sensitivity analysis, and just kind of focus on this study itself for now?

CHAIRMAN NANCE: Let's go ahead and do this, and then, if there's follow-up questions, Trevor, we can take those.

MR. MONCRIEF: Okay. That works.
CHAIRMAN NANCE: Thank you. Paul.
DR. MICKLE: Good morning, Rob, and I appreciated the presentation, and my question is fairly similar to Trevor's, but it focuses in on the response rates, and it's very interesting that it's real steady at 30 percent, even if the overall FES survey itself, with much larger sample sizes, and it's just about what you saw in your initial study, in the treatments, and a lot of the literature says out there that, the more questions you add, or the more complexity, or the more choices that are available to select, it decreases responses, but you didn't see that here, which $I$ would say is, I guess, a good sign, even though the sample sizes are fairly low.

My question is kind of similar to Trevor's, I guess, but is there response rate variation from -- Maybe not wave, but I guess wave or season, and is there a temporal response rate change, because, during the colder months, when people aren't as busy, or if you're
way up north, and you're inside more, you may have a higher response rate, or there might be a telescoping variability over time, because people are not so busy, and they may not telescope as much, or, if they're real busy -- When the northerners have good weather, or the summertime, their outdoor efforts are shortened, compared to the southern states, or, even in the Gulf of Mexico, in the southern parts of the Gulf, the efforts are much higher all year round than in the northern Gulf, when efforts drop off a lot.

I just wonder -- I am looking through the appendices now, but did you see response rate variability through waves, or did you see telescoping variability in your small sample size, $I$ know, but, over time, did you see anything like that, or look at it? If I haven't found it in the appendices, I apologize. Thank you.

MR. ANDREWS: Thanks for the question. Generally, within a state -- We see a lot of variability in response rates among states. Within a state, throughout the year though, response rates are pretty steady, and so we don't really see a whole lot of variability, and so $I$ don't think that's likely to impact the -I don't think that response rates are likely to impact estimates among waves.

DR. MICKLE: The literature suggests differently, but I don't know, and $I$ just wonder if there's a large enough sample size to, you know, come back, I guess, to the literature trend that more questions, and more choices, decrease the response rate, or could potentially increase telescoping.

MR. ANDREWS: So, in terms of the questionnaire, $I$ mean, the $F E S$ is -- In terms of within the grand scope of surveys in general, mail surveys, the FES is a pretty simple, short questionnaire. I mean, it's literally the front and back of an eleven-by-seventeen piece of paper, and it only takes a couple of minutes to complete, and so I suspect that adding, you know, one question per person, or $I$ guess two questions per person, to include an additional reference period, is not that much of a perceived burden from a respondent, and $I$ think, you know, some surveys are 200 questions, and they take you an hour to complete, and so $I$ think you might expect to see some differences between those really long, complicated surveys and the FES, which just, in general, it's a three-page survey, or questions on three pages of a folded booklet, and so it's pretty simple, regardless of whether you're breaking up a wave into smaller periods of not, and so I would not expect that to have an impact on response rates.

DR. MICKLE: Thank you.

CHAIRMAN NANCE: Thank you, Paul. Luiz, please.
DR. BARBIERI: Thank you, Mr. Chairman, and good morning, Rob. Thank you for the excellent presentation, and it's good to have this level of detail and, you know, discussion of all these components. I have a couple of questions looking at your Slide 20.

One is, you know, thinking about the follow-up study that's going to be a full-year study and involve a broader suite of states, my understanding is that you guys are going to be conducting that study to look into the question order and the bounding, plus also testing simultaneously the one-month wave period, and so is that correct, and, if so, you know, do you think that, in one year -Are you going to have enough sample size, really, and the ability to integrate all of those variables in this next follow-up study?

MR. ANDREWS: So, yes, that is correct, and that is the plan. We're going to incorporate both the question order change and the one-month wave into a single study. I'm not sure if what you're getting at is you think we need a longer benchmarking period to compare the results, and is that --

DR. BARBIERI: Exactly. Yes.
MR. ANDREWS: I'm assuming this refers to the benchmarking period used for the CHTS to FES transition, which was a three-year period.

## DR. BARBIERI: Correct.

MR. ANDREWS: So there's two different components of that. There is the overall sample size. The longer you sample, the larger the sample size, the more precise your estimates are going to be, and then the other part of that is looking at trends over time.

In the CHTS to FES transition, the reason we were moving away from the telephone survey was because people were moving away from landlines, and so the CHTS, the telephone survey, was no longer a viable way to collect data from the household population, and that was something that was changing over time. Landline use was decreasing over time, and so we wanted to be able to capture that in our benchmarking and our calibration period.

Now, we only did three years, and we captured some of that, but, you know, that transition began fifteen or twenty years ago, and continues to this day, and so a longer benchmarking period probably would have been very helpful, in that case.

In this case, it's probably pretty unlikely that the effect of question order, or one-month waves, would change over time, or at least $I$ can't think of a mechanism as to why that would be an effect, why that would be the case, and so $I$ don't think it's really necessary to have an extended benchmarking period to monitor change over time. I think that effect is probably likely to be pretty consistent.

Now, it's always better to have more samples, but, when we did the benchmarking for the CHTS, the sample sizes that we used were much lower than the current FES sample sizes, and, in fact, I think the FES sample size now might be -- For a single year, it might be as much as we did for that entire benchmarking period, and then we're effectively doubling that with these -- With the second questionnaire in the study that we're planning for 2024, because we're basically doing the FES sample size every month, and so the sample size for the entire year will be double the FES sample size, and so I think the sample size should be pretty sufficient to come up with some pretty accurate comparisons, or some pretty effective comparisons.

Whether we proceed, we're going to start collecting data in January, and we'll be evaluating those results as the data come in, and so we'll be able to tell, at some point during 2024, whether we think we need to continue or not with the benchmarking period, but it's a very different -- I guess, to answer your question more directly, it's very different than the CHTS to FES transition, because of the change in telephone use over time, and that's not something that is likely to impact this particular benchmarking period.

DR. BARBIERI: Okay. That makes sense, Rob. Thank you. Then my second question has to do with the last bullet on Slide 20, which is the time period, right, that we expect -- When we expect to have full completion of an improved FES design, and us trying, the SSC, to evaluate, okay -- What's the earliest time period for us to expect that the new and improved survey, that accounts for all these other factors, is going to be implemented, so we can think about interim measures that perhaps might need to be taken in terms of assessment and management?

Looking at that slide, $I$ find it difficult that -- I think that, Rob, it's ambitious to think that we would be ready to have an improved FES design, fully implemented, by 2026, and I know that your slide there is clear, and it says "no earlier than 2026", but, considering three sub-bullets that you have underneath there, completion of the follow-up study and calibration updates and a
favorable technical peer review and updated FES transition plan, and then you have to develop, right, a fully-calibrated historic time series of catch and effort estimates for this to be really, you know, useful for assessment and management.

You know, $I^{\prime} m$ sure that we're trying to take care of this as soon as possible, because of the urgency of having this data, right, critical data, integrated into assessments and management, but I would like to hear your thoughts, in terms of what you believe might be the viability of that 2026 , which $I^{\prime}$ ve been hearing a lot, right, that you will have the results of the new study able to be implemented into a new and improved FES for 2026, and I'm finding that to be ambitious, and perhaps not realistic. Any thoughts on that?

MR. ANDREWS: I mean, I think we have the benefit of going through this process before, and so, you know, we have some prior results to inform our expectations. We're also -- The current plan is to incorporate the new pilot study work into the existing calibration model, which the machinery is already built for, and so it's going to be adjusted to incorporate the new data, and so, once the model has been adjusted, it will be a much simpler transition to implement the model and revise the historical estimates than the previous calibration, and so all the machinery is done, and it's just updating that with new information.

We also have started that process already, using some of the existing pilot study data, and so we've been working with Jay Breidt, who created the current calibration model, and provided him with some of our pilot study data to start doing some simulations to build the model, and then we'll continue to feed information into that as the pilot study is completed, and so a lot of that work is already done, or is being done, and then, once we have completed pilot study data, in early 2025, we'll begin the process of finalizing the model, initiating the peer review, and calibrating historical estimates, and so $I$ don't think it's unrealistic to shoot for 2026.

I mean, anything can happen between now and then. We can have government shutdowns, and we can have pandemics, and we can get unexpected results from the pilot study, but, I mean, I think that, now, our plan is to proceed as if we're going to implement the new design in 2026.

DR. BARBIERI: Okay. Got it, Rob. Thank you.
CHAIRMAN NANCE: Thanks, Luiz. Mike, please, Mike Allen.

DR. ALLEN: Thank you, Rob, for the presentation, and your conclusions on the telescoping error made a lot of sense to me, and that wasn't something that I thought about before, but it does make sense that people would have that kind of bias in their responses to remember back to their last trips, and some of those may not be in the period.

I wondered, in looking at your results, and I am asking this really just based on your experience in working with these data, of putting the uncertainty associated with the recall period and the question order in the context of the overall uncertainty of the estimates. I wonder if, you know, just the overall non-response bias, and uncertainty that comes from non-response, and like where is this contribution of this study, relative to some of those other major error estimates in these surveys? I wonder if you could just comment on that.

MR. ANDREWS: I mean, the challenge with any survey is you don't know the truth, right, and so everything is an estimate, including your uncertainty. We have done studies to evaluate non-response bias in the FES, and those reports are available from our website. We have weighting adjustments in place to minimize bias resulting from non-response, and so I think non-response -- I won't say there is no non-response bias in the FES, but we have methods in place to mitigate non-response bias, and the results from the nonresponse bias studies have indicated that they're fairly effective, and so I don't -- I don't think that non-response bias is a large contributor to uncertainty in the FES at this point, certainly relative to the results from this study.

I mean, these results suggest that measurement error is a pretty large source of bias in the current FES design, and I think it would also be larger than any coverage error. The sample frame for the FES is fairly comprehensive, and it includes all residential addresses serviced by the Postal Service, and so bias resulting from non-coverage is generally not a problem, and so I would think that measurement error is among the largest sources of error in the current design. Does that answer your question? Is that what you were asking?

DR. ALLEN: Yes, that's exactly what I was asking, and I appreciate your thoughts there, Rob.

MR. ANDREWS: Sure. Thank you for the question.
CHAIRMAN NANCE: Thanks. Mandy, please.
DR. KARNAUSKAS: Thank you, Chair. Hi, Rob. Thank you for this
presentation. I really appreciate you taking the time to break this all down for us. It seems like there's a lot of testing that would be required to understand all the different biases and the issues with the response rates, and so I was wondering if there was any discussion of trying to calibrate the survey methodology with observed fishing effort, for example, you know, setting up cameras at some of the passes, or just sending someone out to count those as they go out fishing, and I think FRWI did this at some of the more popular passes in the Panhandle, and I don't know if those data have been used, but it just seems like this might be a possible effective way of trying to calibrate the survey data, particularly in some of the states like Maryland, where I think you have like a single point of exit for the offshore fishing, and so I was just curious if there was any discussion along those lines. Thanks.

MR. ANDREWS: Thank you for the question. There have been some attempts to do that. The Mid-Atlantic Council, for example, had a study where they put a camera at the inlet at Ocean City, and I have not received an update on that recently, but I know there were some challenges associated with weather and the technology, and so that work is kind of ongoing, and we've been working with Jason Didden to make some comparisons in the effort.

In some limited circumstances on the Atlantic and the Gulf coasts, I think there is some possibility for that, but it is fairly limited. I mean, if you're looking at Ocean City, that's one thing, but, if you're looking at Chesapeake Bay, where there is 50,000 personal residences on Chesapeake Bay, or its tributaries, each with a dock, it's much more challenging to do that, and so I think the answer to your question is, yes, there are some efforts to do that, although it's a little bit limited, and we're -- I mean, we're certainly open to other efforts to do that.

DR. KARNAUSKAS: Thanks. Yes, I understand that it would be really challenging in some areas, but $I$ wonder if you could get that sort of calibration factor by looking at some of the more feasible areas and then just if it would be feasible to apply that across-theboard, but thanks for the response.

MR. ANDREWS: I mean, just a follow-up comment, kind of based on your comment, in terms of applying a calibration factor across-the-board, and, I mean, any data collection includes a variety of assumptions, right, and so, you know, to collect information from one location, or one type of fishing activity, and applying it to others, while there might be some utility in that, you know, there is also some risk associated with making assumptions about fishing activity and how uniform they are across different types of fishing activities, and so it's a challenge, and you just have to weigh
the risks of those assumptions and really think about how applicable those assumptions might be to other types of fishing activity. I mean, your comment -- I completely understand it, and any opportunity we would have to validate estimates is welcome, but there's limitations to any data collection.

DR. KARNAUSKAS: Yes, for sure. Thank you.
CHAIRMAN NANCE: Thank you. Ryan, please.
MR. RINDONE: Thanks, Rob. I have a few questions. Going all the way back to talking about how long it takes to take the survey, and so I have received this survey once, as an angler, and I think I probably spent about eight or nine minutes on it, actually, which involved like going through my calendar and stuff, and, in my particular instance -- I don't know whether I fish a lot, but I think $I$ probably fish a little bit more than the average person might, a couple of times a week, several times a month sort of thing, especially during, you know, good seasons to fish, like, you know, in the summertime and then, here in west-central Florida, in the fall is a really great time to fish.

I think the amount of time that it can take someone to take the survey might be longer, and especially if they fish a lot and they are really committed to trying to provide an accurate representation, and then there might be something where they're going back into a calendar and trying to remember and things like that.

Not being a survey statistician, and like, for this type of a survey, I don't know what sort of effect that might have on how people might respond, but it's just something to pitch at you and, I guess, think about a little bit, and then, if you don't have a response to that, I have a couple more questions.

MR. ANDREWS: I mean, I don't -- Everybody is different, I suppose, and we do this cognitive interviewing, where we sit down with people, and we actually recruited anglers, and we actually just completed a round of cognitive interviewing, in preparation for the upcoming pilot study, and, you know, generally, our findings, in dealing with anglers, are that they really like to talk about fishing activity, and, you know, there is two sides of the coin.

There is them wanting to provide -- Being excited about providing their information, and then, the more you fish, the harder it is to actually provide that information, and so, to some extent, those probably cancel each other out a little bit, and like they're really excited to tell you about their fishing activity, and show
off a little bit, and report that they, you know, fished two times a week, and that makes them feel good to be able to report that.

At the same time, like you said, going back and getting your calendar out, and it takes some time, and it can get frustrating if you can't remember, and so, I mean, everybody is going to be different. You are correct that you probably are a more avid angler than most of the people that take the survey, and, in fact, most of the people that take the survey don't fish at all, and so they just report a zero, or check a box to indicate that, and, in that case, it's a pretty easy question to answer.

I mean, everybody is different, and, you know, there's no -- The information that we get from anglers who are in their cognitive interviewing is that they generally enjoy the survey, and they're happy to provide the information, and there's not a whole lot of frustration in completing the survey, and so I think that's kind of our thinking, is that that's probably how most people -- You know, anglers like to report fishing, and I think that's kind of how we think about -- That's our expectation for what an angler -- For how they will perceive the survey when they receive it.

MR. RINDONE: Okay. Thanks, and so, parlaying off of that and into what Dr. Barbieri had asked about with the sample size, and thinking about the -- About, you know, angler willingness to participate in the survey, and, with the rollout of the information from the pilot study, and what we've been hearing from anglers in the Gulf, I guess one of my concerns would be any effect from any loss of confidence in the existing survey and people's continued willingness to participate in it and whether there could be an effect detectable there, in terms of response rate.

You know, very bluntly, social media has not been kind on this subject, and so just -- Have you guys discussed that at all, and do you have any concerns about, you know, a lack, or a decrease, in angler buy-in to participate in the survey as a result of this?

MR. ANDREWS: I mean, we'll be monitoring response rates. It's something that will become apparent early on. If that is a problem, we can monitor response rates at the stratum level, with different geographic levels, and so, if we're seeing that licensed anglers are responding at lower rates than households that don't have licensed anglers, or that's different than what we've been seeing over time, that, you know, would be a red flag, and something we can think about.

I mean, I guess, you know, I'm interested in what people think about, you know, just general angler perceptions, and are people
-- I understand that people are very engaged in the management process, and they're very familiar with our program, but I don't know how widespread that is, in terms of the general population, and so, you know, I suspect that more casual anglers would probably -- They don't even know what MRIP is.

I mean, I've been on charter boats before, and charter captains don't even know what MRIP is, and so the angler who goes out a couple of times a month, a couple of times a year, I'm guessing is probably not going to question the credibility of the survey, because they don't even know what the survey is until they get it.

I guess, to directly answer your question, it's something that we'll certainly be monitoring response rates, and adjusting accordingly, if we see that they are very different. I mean, I would expect to see that now. Like, if this information was put out a month ago, or two months ago, and, if it is going to be a problem for the pilot study, it should be a problem for the FES in general, and that's something that -- We have been monitoring response rates on a weekly basis, and it hasn't shown up yet, and so I would expect it also be an issue in the general survey, or the current version of the FES, and not just in the pilot study.

MR. RINDONE: Thanks, Rob. I think, locally, in the Gulf anyway, our expectation would be that almost the entirety of our for-hire fleet would be well aware of the survey, and the resident anglers -- Our expectation would be that more of them than not should be aware of the survey as well, and, just with the connectivity of social media and how many different outlets people have for receiving information, especially if they like to get onto the water, our expectation would be that they do have some familiarity with it, even if they've never actually received it themselves.

My last question for you was about consistent sample effects, year-over-year, and you touched on this a little bit when you were talking about -- You had briefly mentioned that, you know, anything can happen, like COVID or whatnot, and so I'm just kind of going back to one of Dr. Barbieri's questions about the burn-in period and the effect of also, you know, having to answer new questions and other effects that might ultimately influence this 2024 run for the pilot study, like unknown economic biases, or management biases, you know, things that we might be compelled by the agency to implement at the council level, due to changes in stock status, and that might affect, you know, how people fish and whether they report and things like that.

I know that you can't know all of the unknowns, but I have to agree a little bit with the concern about whether a year is enough of a
time period with which to recalibrate this information, based on just the variability that we see in things like management bias and economic effects and things like that only in the Gulf.

MR. ANDREWS: Yes, and I don't disagree with you that being able to do it for more years would be better. I mean, at the end of the day, resources are limited, and this is a pretty large-scale pilot study, that is pretty expensive, and I think it's pretty unlikely that we would be able to get that amount of money to do a multiple-year benchmarking period.

I mean, your concerns are noted, and they're certainly real concerns. You know, anything -- The important thing we're measuring in this benchmarking period is the difference between the FES estimates and the pilot study estimates, and so, for anything that would be unanticipated that impacted fishing activity, you know, it would -- To have a real detrimental effect on the calibration, it would need to have some differential effect on the FES versus the pilot study as well, and so, you know, I think that -- That's not exclusively true, but, I mean, that's primarily what we're going to be measuring, and so I think it would be unlikely that one survey would have a differential effect from another survey, in terms of based upon some external influence.

I mean, there are certainly things that could impact overall fishing activity, but I would expect that to impact both surveys in a similar manner, and, granted, that doesn't necessarily resolve any concern about the benchmarking period, but I think it will limit impacts on the model, because we are looking at the difference between the two surveys and not just an overall level of fishing, and, again, $I$ know that's not really 100 percent getting at your concern, but, at the end of the day, we have a certain amount of money that we can use on a pilot study, and it's not going to be there year after year after year, and so we have to get this done and make some decisions based upon the results of the pilot study, what we can do.

MR. RINDONE: Thanks, Rob.
CHAIRMAN NANCE: Thanks, Ryan. Luke, please.
DR. FAIRBANKS: Thanks, and thank you for the presentation. This is interesting, and it looks like some really good work, and so I appreciate you taking the time. I was curious, and you kind of mentioned this in the response to the previous set of questions, and $I$ was curious if you could speak more to the cognitive interviews. It sounds like these are used primarily to inform the design of the surveys, and $I$ was interested in -- Well, number
one, I was kind of interested in how those were conducted, the nature of them, who they were with, maybe, and then $I$ was also interested in if you all had conducted them, or had considered conducting them, as follow-ups, maybe with a subset of interested survey participants, and that particularly crossed my mind given the issue of sort of the significant differences versus the systematic differences.

Something like follow-up interviews, in a sort of multi-method design, could maybe help bolster some of those results that, you know, may not have come across as statistically significant, and so I was curious if you had considered that, or, you know, I understand that that's also a funding issue, like you mentioned in the previous question, but just your thoughts on that would be appreciated. Thank you.

MR. ANDREWS: Sure. Thanks. The cognitive interviewing, they call it LAB, and it's in a lab setting, which is basically just you sit down with somebody, either in a conference room or virtually, one at a time, and so the cognitive interviews were done by Westat, who is a survey research company, and they're not actually -- We participate as observers, and can ask questions, but we're not moderating the interviews.

You just ask somebody, a respondent, to complete the questionnaire as they would if they received it in the mail, and so they take a few minutes, and they complete the questionnaire, and then you walk them through it, pretty much question by question, and the questions, the substantive questions, you do some probing and some follow-up questions, to see how they answered the question or why they answered it the way they did, and so, for example, one of the questions on the survey is how many people live in this household, and I don't know the exact wording, but it's something to that effect, and so we want to know how many household members live in the household.

They provide an answer for that, and then we ask them what they think about when they think of the household, and what we want to know is -- So a household, to us, is an occupied housing unit, and it's the people who live at an address, essentially, under one roof, but, you know, we want to make sure they're not telling us about their grandchildren who live next door or things like that.

Then we ask about the fishing questions, and we'll ask, you know, some probing questions, to find out if they can distinguish between freshwater and saltwater, and when they -- The number that -- If they told us about two fishing trips during the wave, we ask them how they came up with that answer, and is that generally what they
do, or did they specifically think about two separate events that they then enumerated and provided the answer, and so it's that type of information, to see if the question is clear, the navigation of the instrument is clear, the instructions are clear, that type of thing.

It's very qualitative, and so you're right that it is used to inform the design of the survey, and we're not making a statistical inference based upon the cognitive interview, and so it's generally a type of analysis that is done prior to fielding the survey, to help develop a questionnaire and any supporting materials.

We have talked about doing some follow-up interviewing in 2024, after we get some results of the pilot study, to try and explain any unanticipated results that we might get, and so, yes, that's a really good suggestion, and it is something that we've thought about, and not really like a follow-up interview of a sample of respondents, but just, you know, a handful of people. If questions come up, or we get results that we can't explain, we might do some follow-up interviews with some anglers, to try and tease out why we're getting the responses we're getting.

In terms of who these people are, the interviews we just completed -- We started out with some face-to-face interviews just in Maryland, because that's where we're located, and that's where the survey research firm is located, and so we recruited some anglers from the Maryland saltwater fishing license directory, and then, after that -- Those were all face-to-face interviews, where we sat down with people one-on-one.

Then, based upon that, we made some changes to the questionnaire, and we reached out to some folks on a broader geographic scale, and, I mean, they went from New England to the Gulf of Mexico, I believe, and we did a handful of interviews virtually, where we recruited people from state saltwater fishing license databases, from NSAR, and so it's a very useful tool.

It's qualitative information, and it's very good information, and it's much more -- I mean, it's very useful, but it's kind of limited, in terms of the inference that can be drawn from the interviews.

DR. FAIRBANKS: Thank you. That's really helpful, and I appreciate the detail. I guess, you know, my -- Well, I have a personal bias, because I'm a qualitative researcher, largely, but, you know, I think qualitative research can be limited, but $I$ think there's an opportunity here, given some of the sort of outstanding questions about the, you know, statistical significance, or verifiability,
maybe, of some of these results, where, like you said, doing some sort of follow-up interviews could bolster those sorts of things, and that, obviously, is an effort and budget consideration, but, you know, I do wonder if there are ways where some sort of systematic interview process, with a subset of respondents, could answer some of these outstanding questions in a pretty rigorous way, and not in an anecdotal way, but, yes, I appreciate the answer, and that's helpful. Thank you.

MR. ANDREWS: I guess a quick follow-up on that, and we have tried doing some sampling of respondents, resampling of respondents, $I$ guess, in the past, in conducting follow-up interviews, either via online or telephone interviews, and it's -- I think there is value in it. It's pretty challenging to get people to participate. I mean, we contact a household, and you don't know if the person that you're talking to on the phone, for example in a follow-up phone interview, was the person who completed the survey or not, when you ask about it, and they have no idea what you're talking about, and so it's hard to get the person who completed the survey on the line.

We have some challenges with it, and we have attempted it in the past, and, you know, I think we've probably learned something from that, and it would be -- Having a scripted interview is challenging as well, and I agree with you that kind of these almost cognitive-interview-like follow-ups, where they're not scripted, and you're just probing for some information, could potentially be useful to try and address some outstanding questions, and so that's a very good suggestion.

DR. FAIRBANKS: Thank you.
CHAIRMAN NANCE: Thanks, Luke. Steven, please.
DR. SCYPHERS: All right. Thank you. Thank you, Rob, for that presentation. My questions relate to actually the last couple of comments you made there, and I'm generally interested in the element of FES that asks the respondent to report on the activities of others, and, for the specific kind of content of this report, the recall bias, I was hoping that you could comment a little bit about that, about, you know, Angler 1 versus Anglers 2 through 5, and what we think about those types of biases, or concerns, on the individual, versus their reporting on others.

You mentioned the challenge of getting the original person back on the phone to report to others, but I wonder if those reporting on others is robust, if that would even matter. If you got 3, they should be able to reliably report on 1 and 2, and so $I$ wondered
your thoughts on that, on that element of FES in general, and then just a general comment.

How can you -- How do you all take those multiple anglers within a household and then come to a single number? How is the household number produced? Is an average or a sum, and, if you could just talk about that a little bit, I would really appreciate it. Thank you very much.

MR. ANDREWS: I will start with that one first, the last one first, and so it's just the sum of -- The sample unit is the household, and so we calculate the total number of boat trips and the total number of shore trips per household, and that's what we use to expand the estimate to the population, and so we just add together the individual -- The number of boat trips and the number of shore trips for each individual to calculate a household number of boat and shore trips.

With respect to the household-level information, I mean, we don't -- We make the assumption that either one person can answer for all the household members, or they are getting the information directly from the household members, and, I mean, we don't have any -- We have not done really any follow-up analysis on who is reporting the information or anything like that, and, I mean, I don't know if there's specific things that you're interested in or what, and so, if you have any more -- I'm not sure exactly what your question is, I guess.

DR. SCYPHERS: Sure, and I will ask it a little bit differently, and so is the current assumption that the individual who takes the survey, Angler 1, that their recall, and whatever biases, or errors, you know, are within that, like this study looked at, that that is consistent, that their recall is the same for themselves as it would be for others, so that there's no different or additional error for their recall of other individuals within their household, but it's consistent on 1 through 5.

MR. ANDREWS: Yes, that is the assumption. Now, we don't know if they're actually providing the information for others, or if they're getting the information from others, but, yes, that is the assumption, that recall ability is the same for all members of the household, whether it's the person -- Whether Person 1 is reporting for everyone or they're reporting for themselves.

DR. SCYPHERS: One quick follow-up, if I may. Did the FES instructions tell them to get the information from others, or is it their perception of the others, or their memory?

MR. ANDREWS: I believe that it is -- I don't think it specifies how they're supposed to get the information. I think there is some language that says -- So the first person, the call to the first person, says Person 1, with a "you" in parentheses, which implies that the person who is filling it out is Person 1, and then People 2 through 5, the other members of the household that we collect information from, are labeled as Person 2, 3, 4, and 5, and I believe the instruction is to complete the information for you and the other members of your household, and so we don't really specify whether they should get the information from the other members of their household directly or whether they should just come up with it on their own. The instructions do not really specify how they get that information.

DR. SCYPHERS: Okay. Thank you. That helps a lot. I mean, I'm curious of that might raise to a level of, you know, exploratory study at some point for you all, considering that all of the anglers are treated equally. In terms of getting to the final estimate of effort, it seems like that might be an area where there is some stuff not getting picked up on, but thank you very much for the presentation and the responses.

MR. ANDREWS: You're welcome. Thanks for your question.
CHAIRMAN NANCE: Trevor.
MR. MONCRIEF: I am just going to touch on that larger side of everything, right, and so Rob has done a great job of going through their next steps and kind of how they're looking at testing what they've found, and he's right that there's only a finite amount of money and time and everything else to be able to focus yourself on these different projects and solve the issues, but I will say that -- This is to the larger side of, right, and so the findings from here, the discussions that we've had over the last, you know, three or four years on all the stuff on the recreational side, has pretty much led to a point where there's going to be more than just this thing going on in this reference time period through 2026.

I mean, essentially, you've got, you know, our state pursuing looking at an LA-Creel-style survey, or effort estimation, and the other states are considering it as well, and there's a lot of moving parts over the next two years, and, as a state who has voiced concerns, you know, a fair amount, you know, the only thing that I can do here is applaud Rob and Richard's team for making the efforts that they're making, and then, you know, essentially, I have to say that $I^{\prime} m$ a little bit optimistic about what we're doing here and what's going on over the next two years, because I think, at the end of the day, once all this is said and done, the
pragmatic approach that's being taken, at multiple levels, that examine multiple ways of doing things, will end up getting us in a better spot overall than we have been in the past.

I just wanted to say, you know, there's a lot more going on outside of just this, and I applaud everyone for taking it on, and $I$ hope, at the end of all of this, we'll be in a better spot, but it is going to take some work to get there.

CHAIRMAN NANCE: Trevor, I appreciate that comment, and I agree with you. I think this opened up some issues, and we need to resolve those and move forward, and I think it will help in the broader sense, also. John Mareska, please.

MR. MARESKA: Thank you. Rob, great presentation. My question was very similar to Steven Scyphers', and, basically, I believe you answered it, and $I$ was just curious if the responses had been separated about by the primary person answering the survey and the other household respondents, to see if the telescoping was primarily associated with the primary person answering the survey and then possibly looking at maybe omission of information by the other members of the household, and so thank you, and that was it.

MR. ANDREWS: Just one follow-up on that. During the cognitive interview process, we are asking people to come in to complete the full questionnaire and not just provide information for themselves, and so we do probe a bit on how they came up with the answer for other household members, and how challenging that is, and so it's not like we're not -- I mean, we acknowledge that one person is probably providing information for all the household members, and we try and get, at least in a qualitative sense, some feedback on that, or we have tried to get some input on that from the cognitive interviews.

Generally, you know, people in the household fish together. If we're interviewing a male, a husband, then they will say, well, you know, my wife always fishes with me, except on this one occasion that she didn't, and they seem to be able to do it pretty well, at least in the limited interviews we do through cognitive interviewing, and it does seem to be an activity where everyone in the family fishes, and they do a lot of trips together, and kids with dads, wife with dad, whatever, and so we have looked at it on that level anyhow.

It's also -- You know, we're not sure, when we get these back, and we assume that Person 1 is the person who completed the survey, but I don't think that's probably always the case, because you can see a lot by handwriting, right, and you can tell that the same
person is completing the survey, but, oftentimes, Person 1 is identified as male, and Person 2 is a female, and, generally, I think the survey literature suggests that females are more likely to complete a survey than a male, and so I think there's probably some instances where a wife, or a significant other, is completing a survey and putting a male head-of-household as Person 1, and putting themselves as Person 2, and so there's a lot of interesting dynamics that happens in just completing a simple questionnaire, and I agree that there is some opportunity to jump into it.

I think, once we get the big bites taken care of, and get the big changes implemented, hopefully we can start looking at some of those other things that I think are probably a little less likely to have such a big impact on the estimates, but are very interesting from a research question.

CHAIRMAN NANCE: Thank you. Harry, please.
MR. BLANCHET: Thank you. I had a bit of a different angle, and you talked about the cognitive interviews, and that these were derived from the angler license frame. I understand the difficulties of it, but has there been any cognitive interviews from the non-angler respondents, or, sorry, non-licensed respondents?

MR. ANDREWS: Yes, and so we did -- When we were initially developing the survey, in the initial cognitive interviewing we did in 2013, it did include several non-licensed anglers, and so these were just people either randomly selected from the telephone directory, or an addressed directory or something, and we asked them to participate in the cognitive interviewing.

MR. BLANCHET: Okay, because one of the big differences between the FES and the prior CHTS, to me at least, was the difference in the number of total anglers, and a lot of that is from that nonlicense component. That has been one of the struggles that I've had in trying to understand, at least for Louisiana, and we're not really observing non-licensed anglers in anywhere near the proportions that the FES is reporting our shore mode, which is where we get the highest fraction of non-licensed anglers. It still has about 87 percent licensed, and our shore is -- How do you say it? It's different than a lot of other shore modes.

We don't -- We tend to -- We certainly have people who avoid us, because we have a decal on the side of the truck, but we also have some fairly skillful interviewers, and they are good at getting information from people, and so, while that may be a slight underestimate, I don't see it as being egregiously wrong, but that
is very different than what we see with the FES, and has there been any consideration of testing that?

You know, you talked about the interest in anglers being recognized as anglers, and their ability to know the difference between freshwater and saltwater, and is any of that going to be considered going forward? Thank you.

MR. ANDREWS: Thanks, Harry. I guess the first thing is that the CHTS, the telephone survey, was also a random household survey, and it didn't sample licensed anglers, and so it was just randomlyselected landline telephones, and so, in that sense, it was similar to the FES, in that the sample unit was the household and not an individual licensed angler.

With respect to your question, we actually have a study in the field now that is collecting data for July and August, where we were evaluating the interaction, or the association, between asking a license question and fishing activity questions, and so the current FES only asks about fishing activity questions, and so we have two experimental questionnaires that include questions about whether or not they have a fishing license, in addition to the current trip question.

In one version of the questionnaire, the first person that we'll question, after the demographic questions, is if they had a saltwater fishing license that was valid in the state during the reference period, and then we ask the trip questions. Then, in another version of the questionnaire, we ask the trip questions and then ask the license questions, and so, in one version, we ask the license question, before the effort questions, and, in another version, we ask after the effort questions.

We're going to be comparing estimates of prevalence, and so we're going to be evaluating whether anglers are more or less likely to report fishing activity when they are also asked the license questions, and so those comparisons will be made to the FES, and then we'll also be monitoring, or evaluating, whether the position of the license question impacts effort reporting, or if effort reporting impacts the response to the license question, and so we're hoping to get at that a little bit, and the reason for that is, you know, in your correction for license coverage, you're asking people who have recently been saltwater fishing if they have a fishing license.

We want to determine how accurate those responses might be, and so that's the purpose of that study, and we have another version of the questionnaire that doesn't ask any fishing questions, and it
just asks if they have a license, as well as some other outdoor activity questions, to kind of give us a baseline of whether or not -- Or just a baseline of reporting saltwater fishing activity in the absence of any trip questions, and so we're hoping to have those results probably coming out sometime early next year.

We have not asked about that in the cognitive interviewing, however, because we don't include a license question on the FES, and so, because we're kind of limited in how many cognitive interviews we can do, we focused on the questions that are actually included on the FES.

MR. BLANCHET: My thought is, just in general, if you ask somebody if they've been fishing, if you talk to someone who is a licensed angler, they are a lot more likely to be invested to the degree that they know the difference and recognize the subtlety between fishing in the subdivision pond versus fishing in saltwater areas, which may not be the same thing, unless you're living in Florida.

CHAIRMAN NANCE: Thanks for that question, Harry. Dale.
MR. DIAZ: Thank you, Mr. Chair, and thank you, Mr. Andrews. I think you're doing a great job with your presentation and helping move this discussion along, and I appreciate the great discussion so far from the SSC.

I guess I just wanted to make a comment, and maybe just plant a seed for the SSC about maybe something I think the council might like to hear about, and so from now to 2026 is a long time, and Dr. Barbieri touched on this, and so the council has had a great deal of discussion about interim measures, especially as it relates to assessment and management for species that are substantially impacted, and they did pass the following motion at the council meeting.

The motion was to direct staff to provide an inventory of council actions in the foreseeable future that we expect to be impacted by changes in FES, along with the level of exposure, and bring that back to the council at the October meeting, and so any input that the SSC has related to the substantially-impacted species, and how interim measures should be handled, and I think Ryan would probably appreciate it, and $I$ know that $I$ would definitely appreciate it, and so, with that, thank you, Mr. Chair. It's not really a question, and it's just kind of planting a seed about maybe some discussion on that before the meeting concludes.

CHAIRMAN NANCE: Dale, thank you so much for that. Ryan.

MR. RINDONE: Thank you, Mr. Chair. Rob, I had a question about the study that you said was going on -- I think you said July and August, or August and September, of this year, and looking at asking the licensing question, along with the fishing activity question, and, bluntly, I mean, how honest do you expect people to be in answering whether they broke local laws? Is there any previous work, perhaps, on this, and perhaps from terrestrial management, that might help inform this, I guess for context?

I'm originally from North Carolina, and I'm still an active deer hunter, and $I$ know that there have been surveys that the North Carolina wildlife department, and I don't know what it's called now, but has asked in the past that have had licensing questions tied to harvest questions, and so I didn't know if maybe there was anything from terrestrial management that might inform the probability of somebody answering a question about -- Essentially, it's tantamount to did you break local laws in the conduction of this fishing activity.

MR. ANDREWS: Well, so that's exactly what we want to get at. I mean, if somebody had just completed a fishing trip and were intercepted by an interviewer in the field, and they were asked did you just do something illegal, and that's what we want to know. I mean, that's exactly why we're doing the study, because that's how the corrections are currently done in states that sample from the license frame, and so that's what we're going to try and measure. That's what we're trying to measure in the study, to see if the responses are different, to see if the responses for whether or not people fished, the percentage of respondents that reported fishing, are different when you ask a license question and when you don't ask a license question.

MR. RINDONE: So I recognize that, and I guess where my question ultimately comes to is how are you going to validate that?

MR. ANDREWS: We know if the address that the household is at matches to a license database, and so that's part of our stratification process, and so that's one thing, and then we have another version of the questionnaire that doesn't ask any fishing questions, and so it's not so much that -- We're measuring the association between a license question and a fishing effort question, and so we have some estimated prevalence, fishing prevalence, from the FES, where we don't ask the license question.

That is different when we include a license question. Then we know there is some association, and people respond differently, presumably because a license question was asked, and that's what we're trying to measure. We don't know the truth. We're going to
know -- You know, we're going to have multiple estimates of fishing prevalence, and multiple estimates of license prevalence, under different scenarios, and we want to know if those -- If the effects that define the scenarios are impacting the results.

MR. RINDONE: Thank you.
CHAIRMAN NANCE: Thank you, Ryan. Trevor.
MR. MONCRIEF: Me and Rob have kind of talked about this a little bit, on the license stuff, and, you know, I figured that I would just provide my perspective first. I mean, Dale's point -- I think he makes a good one, right, and we've got to think about the actionable stuff, and $I$ was kind of thinking about going to that after we at least look at that sensitivity, but, going back to the license thing, so, essentially, the first thing we did -- Because the situation in Mississippi is essentially that 80 percent of our effort is in the unmatched coastal category, which means that's kind of like, you know, related to not being licensed, which is the opposite of what we have -- Or the perception of it, right, that the license should be around 85 or 90 percent overall.

The first thing we found, and the first thing we're sort of working on, was on ourselves, right, and we looked at basically the timeliness of our license data, how it was being exchanged, if it was handled by another agency outside of ours, and I think there's a good -- You know, there's a good point to make here, and Rob and then are going after it the best way $I$ think they see it, but one of the issues that you run into is that the license frames -- You know, most of them are run by the state, or run by state agencies, and they're doled out to the lowest bidder that goes out to them, and they aren't really --

MR. RINDONE: Trevor, you're breaking up.
MR. MONCRIEF: Sorry. Can you hear me?
MR. RINDONE: We can now, yes, but, for about the last ten seconds, you were quiet.

MR. MONCRIEF: All right. I will try to stop mumbling too much. State license systems are doled out to the lowest bidder. Because of that, they don't have, you know, the higher level of technology for accurate matching, for updating things, and everything else, and so the license data frames, and I'm sure the other state folks can agree with this, are riddled with errors.

Now, that probably impacts matching a little bit, but it also
impacts the ability to actually update the information of what's in there, because most of what these anglers are doing are renewing on a yearly basis, and, if they change addresses, it doesn't really follow them at all, and so Rob and I had these conversations, and we've had them as a group, trying to drill down, and we've updated our entire license frame, as to how we pull it, and we're trying to figure out ways to update the identifying information that's being used.

We haven't been able to evaluate that impact, and I think we're going to try to look at it this year, but, yes, it's one of those concerns, and it's one of those that is just fundamental to the survey itself, the license frame, and just trying to figure out does that change have an impact, and, you know, in my mind, I think it does, and I think Rob has got a different opinion on it, but, I mean, I echo Harry's concerns, and I understand where Ryan is coming from, and I think Rob and them are -- You all are approaching it the way you all think is appropriate, and, you know, there's still some things to work on in the background, but $I$ would be interested to see at least how ours works out, to see how it has shifted. That was it.

MR. ANDREWS: Just, I guess, a follow-up comment about the license data, and we don't do license matching to produce estimates of effort by license status. We do the matching to stratify the sample, because it results in a more efficient estimate, and a more precise estimate, for a given sample size, and so our goal is not to estimate how many people are fishing with or without a license, and that never has been the goal, and so using those estimates as like evidence of how many people are fishing without a license probably isn't an appropriate use of the estimates.

It's certainly completely dependent upon the quality of the license frame and the frequency of updates, as Trevor mentioned, and there are matching errors, and we acknowledge that, and that can impact the sampling design, but the intent is not to produce estimates of effort by licensed and unlicensed anglers. It's also done at the household level, and so, you know, if you have one person in a household who is licensed, but you have four anglers, we're not accounting for that.

Just one, I guess, note of caution about using FES data to produce estimates of effort by license activity is it's not -- I mean, that's not the intended use of the license matching.

MR. MONCRIEF: I can understand that sentiment, but you've also got -- You know, there's a balance there, right? If it was like 60/40, you know, where you could where there was some uncertainty
around it, and, to get to what you were saying, I think there would be a little bit of wiggle there, to kind of have an understanding, but I think our concern is just the overall magnitude in that unmatched strata and how -- What the impact of that is.

I get what the intent is, and, I mean, obviously, you're trying to get an unbiased estimate of overall effort, and it's just, you know, looking at it, it does raise a little bit of concerns, and I think, you know, we've at least attempted to address it, and I appreciate you all's help with it as we're trying to move through that.

CHAIRMAN NANCE: Thanks, Trevor. I feel like we've had a -- Rob, I wanted to thank you very much for that presentation, and I thought it provided a lot of discussion, and contemplating what we need to do as we move to our next steps forward, and so I think we've had a discussion, and $I$ would like to -- Dale brought up a good point, and I'm going to kind of save that discussion until we look at sensitivity runs, and that kind of was my intent, and so I think we'll close this. I think we'll go ahead and close this discussion and move forward to our next item, which is the Update on SEDAR 81 Sensitivity Runs with respect to MRIP-FES pilot study, and, Dr. Ailloud, I think you're going to present that to us?

MR. RINDONE: Mr. Chair?
CHAIRMAN NANCE: Yes.
MR. RINDONE: I would like to compel a biological break.
CHAIRMAN NANCE: Okay.
MR. RINDONE: So maybe about ten minutes, to let everybody get up real quick, and we'll come back.

CHAIRMAN NANCE: Actually, that's a great point, Ryan, and I appreciate that. Let's go ahead and come back at 10:15, and, Ryan, we'll go ahead and -- We'll have you, at that time, give us our scope of work and turn it over to Lisa.

MR. RINDONE: All right, and so 10:15 Central and 11:15 Eastern Time we'll come back.

CHAIRMAN NANCE: Yes. Thank you.
(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: Okay. I think we can restart.

## UPDATE ON SEDAR 81 SENSITIVITY RUNS WITH RESPECT TO THE MRIP-FES PILOT STUDY

MR. RINDONE: I can read the scope of work, and so Dr. Lisa Ailloud, from the Southeast Fisheries Science Center, is going to present the expected effects of the overestimation of landings identified in the FES pilot study on the Gulf migratory group of Spanish mackerel, using the SEDAR 81 base model, and this demonstration is intended to be investigative and to evaluate the effects of the overestimation on factors such as stock status and catch projections. The SSC should evaluate the information presented and make recommendations to the council, as appropriate. Lisa, it's all yours.

DR. LISA AILLOUD: Thanks, Ryan. Hi, everyone. I have a short presentation here, but it's just to show you the impact of the FES, the consecutive changes in the FES, magnitude of FES, for Gulf Spanish mackerel.

I am not going to go over any detail on the pilot study, since Rob did a good job of this in the previous presentation, but the bottom line is that we suspect that the FES estimates that were used in the Spanish mackerel assessment may be biased high, by 30 to 40 percent, for shore and private, and so we went ahead and did a sensitivity run on the Spanish mackerel assessment, which was recently presented, which involved taking the base model run and then modifying the private and shore catches and discards time series by decreasing them by 40 percent.

This was a little bit more involved than a simple sensitivity run for Spanish mackerel, because, if you recall, there is a search for initial equilibrium catches for that assessment model, which starts in 1986, but, overall, it's pretty much the same idea, where the only changes that were done were to modify the private and shore time series and then do a little bit of tuning.

In this presentation, I will show you the results on the overall time series of derived quantities, such as spawning stock biomass, fishing mortality estimates and recruitment estimates, and, also, we reran the projections, so we can give you -- So that you can have a look at the change in the stock status and the OFL and ABC recommendations.

Overall, the summary of the results is that the depletion estimates and trends over the time series were very similar between this FES sensitivity run and the Spanish mackerel base model run, and that, really, only the magnitude of $S S B$ and recruits changed, and so, in
terms of stock status, there was no real significant change in stock status, and, in terms of the OFL and ABC recommendations, those decreased by about 25 percent.

Here, just to give you a little bit of a visual, so that you can see what kind of magnitude change $I^{\prime} m$ talking about for the time series, on the bottom-left, you have the spawning stock biomass time series through time, and you can see the blue lines throughout those graphs are the SEDAR 81 Spanish mackerel assessment results, and the red line is the sensitivity run, which was lowering the catches and discards for shore and private mode by 40 percent.

You can see, for spawning stock biomass, it's kind of -- It decreases everything throughout the time series, including the virgin condition. In terms of the recruitment, on the bottomright, you have the same effect of decreasing the overall scale of the recruitment throughout the time series, and, in terms of absolute exploitation rates, there wasn't much of a difference, nothing significantly different.

What that results in, in terms of the fraction of unfished, is that there really wasn't any difference between the base model run and the sensitivity run. You can see, on the right-hand side, that plot through the time series, where the stock is at about 21 percent of -- Sorry. 11 percent of the fraction unfished at the beginning of this time series, all the way to approximately 21 to 22 percent of fraction unfished in 2020. On the left-hand side are just some figures showing the changes in magnitude for the virgin condition for spawning stock and recruitment between the two runs.

This is the MSRA table that you're used to seeing, and I have added a column on the right-hand side with the results for the FES sensitivity, and so, if you focus on those two red boxes, and this is just highlighting the stock status information, in terms of overfishing and overfished status, and so you can see that, with this sensitivity run, we are still in a situation where the stock is -- There is no overfishing happening, and the stock is not currently overfished.

Then, in terms of the projections, I have printed out here, in this table, the OFL that came out of the projections that were decided upon for SEDAR 81, and 2025 was the management year, if you recall, and the recommendation was a constant catch, a threeyear constant catch, projection.

On the top table, you see the OFL for SEDAR 81, in the second column, and then, in the third column, you see the OFL for the
sensitivity run, and then $I^{\prime} v e$ added a column called percent change, to just show you the percent change between the two OFLs, and the right-hand side shows the percent change between the two optimum yield streams.

If you recall, those are 75 percent of $F$ SPR 30 percent for the recommended ABC, and you see that, from 2025 on, there's about a 23 to 29 percent change in this OFL and this optimum yield, and, on the bottom there, it's just a summary of the OFL and the ABC, highlighted in red, that were set by the SSC in July of 2023 for SEDAR 81, compared with how those constant catch projections would have come out had we used the new FES numbers, and the change, again, is 25 percent.

Just so you have it, those are the tables with the full projection results, with all of the $S S B$ metrics and the status metrics, so you can compare line-by-line, and $I$ believe that is the last slide. This is for the ABC. Okay, and that is it, and $I$ will take any questions. Thank you.

CHAIRMAN NANCE: Perfect. It behaved how I thought it was going to, and so any discussion from the SSC on this presentation that was given? Luiz, please.

DR. BARBIERI: Thank you, Mr. Chairman, and thank you, Lisa, for this presentation, and $I$ think this is really, really helpful, right, for us to see, because it kind of, you know, puts in perspective, right, the next step of understanding what the issues with the data and the survey are, which, you know, from Rob's excellent presentation earlier, and, I mean, this is the way that science works, right?

I mean, we -- To move forward sometimes, we have to be continually reevaluating what we have in place now, and finding ways to improve, right, what's there, and so I think that this is a healthy process of evaluating the current status of what's going on with FES and then, you know, being transparent about it and bringing up, you know, some measures to address and get better metrics of where we might be, with a fuller study, and then, you know, implement that into the future, and so that was excellent.

In this step here, it's really for us, as an SSC, and I think it's like where the rubber meets the road, and so how do we go into next steps, the applicability and the use of the data, into assessment and management frameworks? Jess, if you are driving the slides, and, Mr. Chairman, with your -- If you could put that -- Either there or the previous slide, Jess, and maybe the previous one, and I think that, to me, right, one take-home message here is
that, for a species like Spanish mackerel in the Gulf, that has a fairly high proportion of recreational landings as part of their fishery, that the impact of these potentially changes in FES are not going to be minor.

I mean, in my interpretation, a 25 percent change in management advice is not small, right, although, when we look at the stock status, right, and the trends, we realize that those remain basically unchanged, and it's a scaling issue, but, because we provide management advice on basically pounds of fish, and so it's an absolute number, this, in my view, has consequences, and I don't see a 25 percent change in management advice here as being small or inconsequential.

You know, generating discussion here for the SSC, I was looking at -- It's on the order of about three million pounds, give or take, that this change occurs, and then, when $I$ look at the actual outflow magnitude of the buffer that we had implemented for SEDAR 81, you know, between the OFL and the ABC, this change in the FES sensitivity is around that same order of magnitude, you know, and it's about three million pounds, give or take, and sometimes a little less and sometimes a little more.

I wanted to put there some points of discussion for the SSC on this, and then kind of try to bring up an issue that, you know, I think it would be good for us to work with the Science Center in trying to identify a process, right, for us to go through some sort of triage of the stocks that we're going to be seeing in front of us for review, assessments, right, that we're going to be seeing in front of us, and evaluating what the proportion of landings are, recreational landings from, you know, the private recreational component, and then seeing if there are any interim measures that can be taken, so we actually can develop something until the new FES is up and running and this new pilot is completed and we have the new data series started, that we can actually review these assessments and then provide management advice in the order that we need to provide. I see Katie's name is there, and so I don't know if, Katie, you have a comment to --

CHAIRMAN NANCE: Let me interrupt for one second though, Luiz, and then I'm going to turn it over to Katie, because I think she has a -- But the way $I$ look at it, also, is we have $I$ will say three categories. We have species that are heavily recreationally fished, and we have species that are not heavily recreationally fished, and then we have some that are maybe state specific, that we may be able to use something like SRFS, for example, to be able to look at those species as we move differently with the FES values. I think we need to be cognizant of those categories, I
think, in our discussions. Katie, do you have something to that point, or to Luiz's?

DR. KATIE SIEGFRIED: Thank you, Chair. I appreciate that. I have a lot of comments and questions, but $I$ will limit them to this, and then $I$ will put my name back on the list. Directly to Luiz's point, this is offered as a sensitivity run, and we're not recommending that the SSC act on this information to change the ABC recommendations.

Normally, sensitivities are offered to show, you know, the behavior of the model, and we carried it through to projections because of the nature of the change, and, you know, as we heard Rob describe earlier, you know, they are acting on this at $S \& T$, and they're carrying out another study to -- The expectation of full calibration near or around 2026, and so we're trying to figure out how to proceed at the Center as well. This was just meant to show you the relative change, if any, in status and then the relative change, if any, in projections, but this is not a recommendation for change and action.

I think something I would like the SSC to discuss, because we're trying to understand how to provide management advice in light of this potential change, is, if there's no allocation issues, as with Spanish, and so that was why we thought this sensitivity was sort of a good place to start, you know, what is the impact on our status determinations? Is it something that's a relative change, consistent with the change in, you know, the landings streams that are offered, and those are the sorts of questions we were trying to answer with this.

If you're monitoring with the same units the assessment is in, there is no change required for a species that doesn't have a change in allocation, and so that would be like a starting point of a discussion that I would hope that the SSC would have, and I can save the rest of my questions, and I think they're related to what everybody else is going to be talking about, and it would be good to have the SSC weigh-in before me. Does that help, Luiz?

DR. BARBIERI: If I may, Mr. Chairman.
CHAIRMAN NANCE: You bet, Luiz.
DR. BARBIERI: Thank you for that clarification, Katie, and, to clarify myself, $I$ did not interpret this as you're providing an alternative base run to SEDAR 81 that would be used, you know, by the SSC today to set new catch level recommendations, and I'm just thinking about this was sort of like a demonstration of the
potential impacts, correct?

DR. SIEGFRIED: Yes, but it would require that the monitoring be done in consistent units. Otherwise, we would have to make a change there as well, right, and it wouldn't be useful for management advice if it was in different units than you were managing. That's why we had to change from CHTS to FES. If there was a change in FES, we would have to change to those new units, and so everything would have to change together, rather than just the assessment but not the monitoring units.

DR. BARBIERI: I understand that, and that's a very good point, Katie, and thank you for that. I'm just thinking and, you know, does the Center have perhaps a suite of potential options that the SSC, or is the Center having this discussion internally, of what would be potential options that the SSC can consider for these species that have broader distributional range in the Gulf and are not covered by SRFS, for example, where we can think about what the final implications of our catch level recommendations could be, you know, the significance of them, and for us to manage?

I mean, you mentioned the issue of allocation, and that would be one of them, but then, you know, just the absolute management advice, and, you know, a difference of three million pounds, to me, is not inconsequential, and so $I^{\prime} m$ not saying that this is the answer, Katie, but I'm just thinking, you know, is there a way that perhaps the Center can join us in having a discussion of potential evaluation of this issue, and the impacts, so we can provide some guidance to the council in that way, if that makes sense, Katie.

DR. SIEGFRIED: To that point, Mr. Chair?
CHAIRMAN NANCE: Yes, please.

DR. SIEGFRIED: Yes, we are. Frankly, it's in the early stages. We do not have a set of -- You know, a set plan of how we much proceed, and we're very much in discussions, and we even have a meeting with council staff and SERO and Center staff this week, to sort of start that conversation more formally.

Our first step was to take a look at what the changes would have been to, first, our status determinations for recent assessments, and that's the first part of our plan, to offer simulation study work, which is the next part of our plan internally, just to test the potential impacts of this, and, you know, we're also trying to digest the study itself and understand what the new study will offer, whether we might anticipate different changes, similar
changes that are more concrete, and, I mean, we're kind of -- I don't know how to phrase it, but sort of a little bit playing in the dark, but with a tiny little bit in the corner of the room.

I mean, we have things we could try to do, and some of it is speculative now, but each week we get more and more information about what we should and can do, and I hope that make sense. We'll get more information by the end of the week, when we talk with council staff more about a plan, but we absolutely are trying to figure out a suite of options.

At the Steering Committee meeting yesterday, it seemed like the options were wait until the final study and provide no advice, which seems like a terrible idea, to halt all management advice, because there are species we can use -- Or can continue on. Then proceed, offering sensitivity studies and simulation studies to inform the decisions better, or act like this didn't happen, and I really think the second option is best for the Gulf, and so that's the plan that we would like to develop, but it's still in discussion at the Center.

DR. BARBIERI: If I may, Mr. Chairman, and I promise that this will be my last comment.

CHAIRMAN NANCE: Go ahead.
DR. BARBIERI: Thank you. Katie, thank you for that, because this is exactly what I was looking for. I think that, for the committee, and like we don't see what's going on, you know, behind the curtain, in terms of all these discussions that are being had, and, you know, we work very closely, right, with you the Center, and all the other councils and all the other partners involved, and so just knowing that these discussions are being had, and those evaluations, right, are taking place now, it's complicated. This is going to take a while, but $I$ think it's reassuring, and it's good for the committee to know, that this is actually in motion, and so thank you for that.

CHAIRMAN NANCE: Thank you. Carrie, was your comment on this point?

EXECUTIVE DIRECTOR CARRIE SIMMONS: Thank you, Mr. Chair. Along similar lines, I mean, I guess we don't -- You know, whether this pans out to be like an interim and long-term approach, or we have, you know, near-term things that we think we can look at and act upon, versus long-term, and, I mean, those are some of the things that came up in the Steering Committee yesterday, as well as trying to get the committee to help us think about, with the Science

Center, you know, are there any tools, or analyses, in addition to what, you know, has been proposed here, that we could or should be requesting in the future, as you look at these stock assessments, and, you know, what should we be thinking about.

You know, should those be different for species that have a larger magnitude of shore mode, versus the boat vessel modes, and so, as Katie mentioned, we're just trying to get together right now what the council directed us to do, which is that inventory of actions in the foreseeable future that could be impacted by FES, and I feel like an action plan is going to take us a while, and it's going to be kind of a difficult and challenging process, but $I$ appreciate you letting me jump ahead. Thanks.

CHAIRMAN NANCE: You're welcome, Carrie. Thank you. John.
MR. MARESKA: Thank you, Mr. Chairman, and thank you, Lisa, for the presentation. I guess $I$ was on a different track than Luiz, but, during our initial discussions of SEDAR 81, there was a lot of concern, by several members of the SSC, about the shore mode discards, and I thought that would have been beneficial, to see if that issue had kind of been addressed by these changes in the projections, and, additionally, we also looked at a catch equivalency table, which $I$ think was only about 20 to 30 percent different, and so this 25 percent reduction looks like it may put catch equivalency with the FES back on par with CHTS, and so I don't know if you were able to look at that, Lisa, or you had any comments about it.

DR. AILLOUD: Thank you, John, for that comment. Because this was just a strict scaling down, it didn't change the fact that there's high variability in those shore estimates, the discard estimates, recently in the time series, which I think was one of the concerns, was that it's kind of jumped up and down, with very big differences in magnitude, and that's still there, and it's just kind of scaled down.

Then your question for CHTS, yes, you're correct that the exercise of comparting CHTS to FES projections for the previous assessment, and so it wasn't SEDAR 81, but it was the one before, resulted in a change of about, I think, 25 to 30 percent, and so, yes, I guess scaling down FES by 40 percent brings it more closely aligned to the magnitude from CHTS, you know, disregarding, of course, the fact that there was other biases in the CHTS time series that, you know, are not reflected in this kind of simplified overall percent change in the OFL recommendations.

MR. MARESKA: Thank you.

CHAIRMAN NANCE: Thank you, Lisa. Trevor, please.
MR. MONCRIEF: All right. Thank you, Mr. Chair. So a lot of thoughts. When it comes to this, I understand that Option 1, obviously, is, you know, a little bit haphazard, and Option 4 -Definitely we just can't ignore what's going on, and I think some semblance within those two is probably the appropriate direction here, and then I wanted to say, you know, to Jim's point, and he talked about, you know, basically with SRFS, with it being available, and the potential to move forward on, you know, statespecific species, but, also, you have to take into account that FES is still the base of that.

It's not completely independent from it, and the entire time series is relying on FES, just like with every single aspect of everything we do with every species. I mean, FES, MRIP, is the base, and that's what everything is compared to.

I wanted to at least -- I mean, we've been thinking about it over here a little bit, and so I wanted to at least throw out, you know, what our perspective was, and so, obviously, we've got a fair amount of species that -- You know, we had an example of it at the last meeting with vermilion snapper.

You've got a species that, you know, we haven't run an assessment on in a while, and we've got the index for it, but, at the end of the day, there's not really much concern, and we don't envision much concern. I mean, Spanish mackerel is probably another one, and mangrove snapper as well, with how widely distributed it is, and there's definitely a priority list, when it comes to things of concern, and $I$ think of those species that are of concern, and a lot of them have had such large impacts on catch advice over the last let's say decade, and I'm trying to point to like greater amberjack and gag, and, I mean, a fair amount with red snapper, to a degree, and a lot of those are to a point where, I mean, we are acting fairly conservatively, and we've taken three large-scale measures for changes in them.

I know there's a desire to continue on this effort, and there's a desire to continue the process to the best degree, to do the job to the best of our ability, and so to provide catch advice and sound scientific advice, but I wonder if there's not an alternative here of something to consider when we look at those with available fishery-independent indices, to basically use a five-year period of some running time, or some average, basically, and basically compare the next year, like almost like we do with health checks, just to see if the stock is dropping over time, and then establish
some, you know, 75 percent of the five-year average, or some threshold value, and then, if it dips below that, kind of dropping, proportionally, the ABCs and OFLs, based on what we're seeing, and so almost like implement a harvest control rule that gets us into the interim, but makes sure that we're not driving stocks down.

At the same time, we're not, you know, introducing what is a fairly uncertain process into all of this, which is how -- At the end of this, what is recreational catch going to look like, not only from the entirety of the time series, but the impact of the temporal nature of those estimates, right, and so we spoke to the Waves 5 and 5, you know, the September and October timeframes, and whether that's going to elucidate some difference between there, whether those are largely impacted with what we see in our state, and then just the general thought process of we're rethinking the entirety of recreational catches.

We're talking about an independent effort estimate across-theboard and funding that, and how is that going to weigh-in? You know, us considering doing LA-Creel-style effort estimates, and just seeing how it plays out, and, I mean, there's a lot of moving parts, and, like you said, we're kind of in the dark and throwing darts at a chessboard at this point, but, you know, it seems like there's a way to do this in a pragmatic manner that basically we can accomplish two things at once.

One is reconciling the entire recreational time series and getting to a point where we're a little bit more comfortable with it in the past, and also moving forward, and then also providing sound catch advice and ensuring that, you know, the stocks aren't being depleted in a deleterious manner, and so rambling thoughts, and rambling, sprawling thoughts, but that's what I've got.

CHAIRMAN NANCE: They were good thoughts, Trevor, and I appreciate those. You know, those are -- As we move forward with looking at this table, and I think the development of this species table with the ramifications is the important one, but it's not going to be overnight, and $I$ think, with the Center and the council staff meeting, and being able to move that discussion forward, I think that's good, and also to look at what you talked about, Trevor. Roy.

DR. CRABTREE: Thanks, Jim. Well, I think, coming back to some of Luiz's comments, I mean, yes, you look at the magnitude of the change in the catch advice, and it's consequential, and it's a fair amount of fish, but $I$ think, if you looked at the change to stock status, the fishing mortality and things, it's not very much at all, and I think, if you are careful to make sure that you scale
your monitoring of the catches in the same way that you're scaling the catches that are going into the assessment, I think you'll find that it's not as consequential as it seems, because, yes, the catch levels go down, but then the magnitude of the catches also go down, and so the effect on the fishery may not be that great.

Now, this gets complicated in fisheries where we have allocations, and, ultimately, it will necessitate another round of allocation changes, and that is always difficult, but I think we need to continue to emphasize to managers the importance of making sure we're consistent in the catches we're using and the assessment and the way we're monitoring the fisheries, and we keep everything in the same units. If we don't do that, we're going to have a lot of trouble.

I have a little -- I think we need to be careful about not getting too far ahead of ourselves with this. We have a pilot study, but it was really only done in four states, and only two of those are in the Southeast, Florida and North Carolina, and only one in the Gulf, and so it's not clear to me how stable those results are, and, as they expand this geographically and do more work, it may be that 30 or 40 percent now comes out as something different, and I think one of the problems that we always have with these things is the perception that everything is bouncing around, and so we just need to be careful about what we do with this, and we need to recognize that, until we get to a more finalized point, which I guess the goal is 2026, these results may still change.

In terms of how to proceed with this, I agree with what Katie brought up. It seems that ignoring this is just not an option, and we can't ignore it. We've got to acknowledge that this is there, and $I$ also don't think that just stopping management and stopping science advice -- That would not be a wise thing to do, and, ultimately, we may end up regretting that, and so $I$ think proceeding with continuing assessments, and do sensitivity studies, so we can take a look at what the implications of this are, is probably the best course of action for right now, until we -- To get to a more finalized state with it. Thanks, Jim.

CHAIRMAN NANCE: Thank you, Roy. Katie, please.
DR. SIEGFRIED: Thank you, Mr. Chair. I appreciate a lot of the things that have been said, especially with respect to how to proceed. I'm sure, as you can imagine, I would like to find a way -- You know, just so my staff can be working on things that matter to you all and that will be received in a way that is acceptable, rather than, you know, beating our heads against the walls at the SSC, and I would much rather come up with a plan of action before
that.

The types of things that we would want to make sure that we addressed are a lot of the things that have been brought up, and, you know, what is the $S S C$ concerned about, the status of the stock, the recent assessment, and, I mean, I know that allocation decisions are the council's purview, but acknowledging that there is an allocation is probably reasonable, so that it's, you know, not ignored and actually addressed in potential projection work and availability of state survey information, whether it's landings only, or landings and discards, and whether it's a mandatory or voluntary.

There's a whole bunch of things, and the council has worked on this a bit at SEDAR, to give us sort of an impact of $F E S$ on a variety of species and assessments, and I think that, in that list, we'll come up with, you know, key concerns and things that we can focus on to make sure that we address uncertainty, and I also, you know, think that we need to talk more with Rob, and others on the S\&T team, to understand better how they're moving forward.

You know, some of the things that $I$ would ask them are what types of changes you're making to the existing FES that was mentioned in that presentation, as opposed to waiting for the next study, and is this basically a known, that there will be a change, and, if it's a known, is it basically the follow-up study is determining the extent of the change, or are you waiting to make changes until the follow-up study, and those are all things that we need to know and get in this list of uncertainties, to make sure that we're providing you with things that you can and will actually use. I think that got through my whole list. Thank you.

CHAIRMAN NANCE: Good job, and so I think, from an SSC standpoint, I think that, for the next step, I think it's -- I think the Southeast Fisheries Science Center and council staff I think need to look at species, and I think we, as an SSC, can contemplate what we would like to see in assessments and how we could -- What we would look for as we move forward, I guess. Mandy.

DR. KARNAUSKAS: Thank you, Chair. I wanted to try and answer some of Katie's questions, and I think she asked, you know, what concerns the SSC, and what should we be tracking, and I think the obvious one is that we should be tracking, you know, stocks, direction, abundance trends, and, as Trevor mentioned, that could be -- That could be done through some sort of interim analysis or health check approach, to look at -- You know, in light of these big unknowns, what are the stock trends, but $I$ think, larger picture, we also need to be concerned with, you know, tracking
what's happening with the fisheries, because $I$ think there's been some, you know, reallocations and major shifts in quotas that have resulted from these uncertainties, and it's not clear to me what the potential impacts of those to the fisheries are, just these very large swings in management advice.

In addition to looking at stock abundance trends for some of these species, I hope that we could find a way to look at the impacts to the fisheries and to the social and economic outcomes from some of these changes. Thanks.

CHAIRMAN NANCE: Thank you, Mandy. Rob, please.
MR. ANDREWS: Sorry, and I did not intentionally have my hand up, if it is up.

CHAIRMAN NANCE: Okay. So then we won't ask you any questions, and how's that? Anyway, Dale, from a council perspective, I'm not sure there's anything specific from this meeting, and we had a discussion, and we're moving forward on some items, but is there anything specific, from the council, that you would like to address, $I$ guess, at this meeting?

MR. DIAZ: Thank you, Mr. Chair. Asking that right now, nothing is popping to mind, and I do appreciate the fact that several SSC members have touched on their thoughts on a path forward, their thoughts on some of these issues that we're going to be wrestling with, and I do think the list that Ryan has put together for the council is going to be very important for the council to go over also, but I have learned a lot today, and I appreciate the hard work of the SSC and the thought that went into this before coming to this meeting, and so thank you.

CHAIRMAN NANCE: Thank you, Dale, and I think Roy did, I think, an excellent job, at the end, in quantifying some of the things that we're looking at and the fact that, while landings change, you know, the $F s$ and the $M$ and those types of things are not changing to the same extent, and, from a management standpoint, that we're looking at the advice, whether it's overfished or overfishing, those types of things, and so those are the key elements I think that we need to keep a handle on while we move forward with this. Any other items for this particular discussion from any other SSC members? Trevor, please.

MR. MONCRIEF: I will keep my comment to myself and wait until we get it a little more fleshed out.

CHAIRMAN NANCE: I didn't understand a word you said, young man.

MR. RINDONE: He said he would keep it to himself.
CHAIRMAN NANCE: Okay. Thanks, Trevor. Anyway, I guess we'll go ahead and end this discussion. Let's go ahead and move into Other Business at this time, and I think there was a topic brought up by Doug Gregory that we wanted to look at in Other Business. Doug, if you could present that, please.

## OTHER BUSINESS <br> GAG FISHERY IMPACTS

MR. GREGORY: Okay. Thank you, Mr. Chair. I see the time, and so I will keep this short and not pursue what I might have originally wanted to pursue, and, in listening to the presentations that we got, and the discussions, and now the projected closure for the gag grouper fishery, the recreational fishery at least, I would -- I just wanted to have a discussion, and maybe we can do it at the next meeting, or a future meeting, and I'm sure we'll do it before a year is out, of what the council can do to reduce the rate of harvest in the recreational fishery so that the season itself can be as long as feasible.

We're going to have a derby fishery, and we're going to have an increased perceived abundance, and increased catchability of fish, beginning immediately next year, because of the reduced harvest, and that is going to make more people catch more than one fish, and so I think the council should seriously consider the one-fish bag limit for the recreational private sector, and probably trip limits for the headboat and charter sector, and it would be nice to see a similar analysis on the bag and vessel limits for charter boats and headboats separately from private boats, but $I$ am not going to propose a motion, and I'm just, I guess, getting that off my chest, that --

MR. RINDONE: Mr. Chair?
MR. GREGORY: More can be done. Thank you.
CHAIRMAN NANCE: Yes, please, Ryan.
MR. RINDONE: The analysis that was provided is specific to forhire vessels and headboats for both the bag limit analysis and the vessel limit analysis. It's all contained within there, and so there wouldn't be an additional analysis possible, and we've already done it.

CHAIRMAN NANCE: Thank you, Ryan. Doug, go ahead.

MR. GREGORY: I must misunderstand, and I just saw the one-fish bag limit analysis, and that's all that I remember, and I thought that was primarily the private boat, according to an email that I got this morning, and --

MR. RINDONE: The bag and vessel limit analysis was done by dataset, and so it includes MRIP-FES for the shore mode, for bag and, quote, vessel, and it's SRFS for the private vessel fleet, Southeast Region Headboat Survey for the headboats, and then the for-hire telephone survey informed the effort side for the forhire side of the landings, and so it was done by fleet, and that's contained in the bag limit and vessel limit analysis that was shown during the SSC meeting and during the AP meeting, and it will be included in the document that we present to the council in October, and that's what we're working on right now, and so it is specific to the fleet.

MR. GREGORY: Okay. I think I understand you, but I think it would be nice to see the results of each fleet separately, and maybe I just totally misunderstand it, but $I$ will leave it at that, and it's 12:00, and it's time for us to go home. Thank you, Mr. Chair.

CHAIRMAN NANCE: Thank you, Doug. I am going to ask though, and is there any other input for that topic? Hearing none, we will go ahead and go into our public comment period. If there's any individuals on this webinar that would like to address the SSC, please do so, raise your hand. Bob Zales, please.

## PUBLIC COMMENT

MS. MATOS: Bob, you don't have a microphone showing on the webinar. I know he did provide written comment that we put on the website, on our SSC meeting page, and if you want to read up on it, as SSO members.

CHAIRMAN NANCE: Okay. We can do that, and, Bob, if you have a microphone, you certainly can let Jess know, and we can hear your voice. The next one is Katie Fisher.

MS. KATIE FISHER: Thank you, guys, so much for -- I listened to the discussion today, and thank you so much for that, and I will say, you know, I represent the commercial sector, and we own a fish house down here in Matlacha, Florida, and we're also vessel owners, and so, you know, my main concern with FES is the socioeconomic impact that it's had on the commercial sector, and, you know, listening to the discussion today, I really didn't hear anything that -- I mean, we talked about the science and the stocks
and all that, but the people aspect of it.
I mean, FES has really gutted the commercial sector. You know, lots of money was lost because of the reallocations, and every single calibration resulted in a de facto reallocation, you know, and so not only, you know, was a lot of money lost, but now, you know, lease prices are so crazy high, and it's having a devastating effect on our industry, and it's positive to see that there might be some change, but, when $I$ hear 2026, that's extremely scary, because, you know, I don't know how much longer a lot of these guys can last, but that's all I've got today, and thank you again for the discussion today.

CHAIRMAN NANCE: Katie, thank you for that, and I appreciate you bringing that to our attention.

MS. FISHER: Thank you.
CHAIRMAN NANCE: Any SSC member that would like to address Katie's -- Okay. Katie, we appreciate that. Any other -- Bob Zales.

MR. BOB ZALES: Okay. I have finally figured out this virtual world and how to do this. Bob Zales, representing everybody that I've told you in the past, and you all have heard me before on all this FES stuff, since the beginning, when you all first had it in January of 2020.

First off, we've got serious problems, as you can imagine, with all this up and down with effort and whatnot, and I appreciate everything that's been said today and the presentations that have been made, and I'm really interested in the sensitivity run that was done on Spanish mackerel, where, essentially, when you're using CHTS and you change to FES, it moves the percentages up, and then you use the new FES with 40 percent overestimation and it brings them back down, to where essentially it was a wash, and so nothing should have been done, but, at the same time, the main concern here, and I'm not sure that everybody understands this, because I have yet to hear this kind of discussion from any of you all, the whole time we've been talking FES, and that's the virtual world versus the real world in which I live and work and which the people I represent live and work and what the ramifications of FES has done to the real-world activity.

Since FES has been used in stock assessments in its original form, it has changed allocations, more so to the recreational sector in just about every fishery, and it's changed stock biomass numbers, most of them way up, and some of them down a little bit, and it's changed OFLs, ABCs, ACTs, and it's changed recreational fishing
seasons, where red grouper, at one point, had a year-round season, and, once FES kicked in, now they' re down to maybe six months, if that long, and, in other fisheries, it's done the same thing.

On the commercial side, it has reduced quotas and prevented people form fishing and providing fresh fish to consumers, and so consumers have suffered, and restaurants suffer, and fish houses suffer. The damage is there, and the big lawsuit with red grouper, and there's two other lawsuits that have to do with council appointments that are a result, a direct result, of implementing FES in these stock assessments.

The amount of money and the harm that's been made to the social network of people fishing and consumers in this country is massive, based on these changes that FES has made, and now we're in a situation to where, okay, we're going to do some more studies with FES, and we're not even sure -- Maybe in 2026 we might have some more information, but we're not sure about that, and so we're going to continue in creating all this damage, all this social damage, all this economic damage, all based on fictious numbers that are created by this FES system, and, I mean, we all know, from the get-go, and I've got years of experience, from MRFSS on up, and especially when this was all going on, where we all argued that MRFSS was a problem.

Fortunately, the NAS came in, and they declared it flawed, and not only flawed, but fatally flawed, and "fatally", to me, means get rid of that system and develop a new one. Well, the Fisheries Service didn't do that, and they just modified MRFSS and made it into what it is today, and now they continue to modify it with FES.

This is a big problem. The only way you're going to correct the problem in the recreational fishery is to give them some type of online logbook, some type of phone logbook, like we used to have, something so that you can record, number one, how many of them there are, how many of them fish at any particular time, how much time they spent fishing, what they catch, and what they throw back.

The other big problem with FES is, especially when you're changing, and you're adding more allocation to the recreational side, you're increasing the discard mortality on whatever fish you're doing that with, because the recreational fishery is totally unaccountable, and you don't know what their discards are, and you don't know how much mortality they have, and so all these estimations are way up there.

Now, when you look at this 40 percent increase in the recent FES,
that overestimated, now you're going to argue that, okay, well, these high discard mortalities that they had in red grouper may not exist, because we may have overestimated their discards, which would have been discard mortality, and so we really don't have a handle on what's going on.

Our suggestion is to pause FES, and let's work it out, and let's vet it, and let's figure out if it's not going to work, or if it's not going to work, but, until that period of time, don't screw up any more stocks. Don't play with Spanish, and don't play with anything else that's coming. Do them the old-fashioned way, leave it alone, and, the other ones that you have done already, go back and do sensitivity studies as to what this 40 percent increase in effort would have done and see if we really are in that situation or if things need to be kind of put back where they were, and that's my rant for the day. Thank you all very much.

MR. RINDONE: Thank you, Captain Zales. Jess, do we have any other public comments online? Trevor, did you have a question?

MR. MONCRIEF: I just wanted to respond to that, and so I held my comment in the beginning, and while, you know, I don't have the zealousness of Mr. Zales, right, on how much has been impacted and everything else, you know, I can sympathize with him, and also Katie's comments, and that was going to be the comment that I made.

You know, a lot of what we're talking about now, as far as the trends didn't change and everything like that, it's just the magnitude, or the same conversations that we had when FES was first introduced, and I don't think we did anyone any favors over the last few years with some of the things we did, right, and we changed up allocations that, at the end of the day, wasn't our decision, but, you know, it was a ramification of what's going on.

Essentially, this thing has had an impact, and we didn't do ourselves favors, and we didn't do the fishermen favors. You know, in a lot of instances, we probably didn't, you know, do the stock any favors either, and so, I mean, I just -- The reason why I proposed the approach that $I$ did, right, basically trying to use the index of -- Based on some threshold of reduction from the index is to try to just not -- To try to find a path forward that still allows us to monitor stocks, while we can also reconcile this recreational time series.

When I say "reconcile", it's not that, you know, we're just going to move the estimates by 30 percent, but it's, all right, let's take some time and really look at what's the best way to move forward here, and is there another approach, and are there specific
estimates that have issues that we've talked about in the past, and certainly our state has it, and so it's a complex problem that we're dealing with, and that's the only comment that $I$ was going to make at the end, but, since we had two folks talk about it, I figured that $I$ would just go ahead and throw it out there as well.

CHAIRMAN NANCE: Thank you, Trevor. Captain Zales, I couldn't find my microphone to turn it on, but, anyway, I truly appreciate what you had in your comments. Josh, did you have a comment, please?

DR. KILBORN: Yes. Thank you. I wanted to -- First, thanks to Captain Zales, and that was really helpful information, and he brought up a point that I've thought about in the past, and I don't know that $I^{\prime} v e$ ever heard any formal conversation surrounding, but that just might be because of my, you know, tenure on the committee, but the idea of like a formal logbook for recreational fishers sounds appetizing, to me.

You know, the logistics don't, but that seems like, you know, a useful tool, particularly for a region that is known to have a proportionally outsized effect from that sector, and so, you know, I just kind of wanted to echo that sentiment, that $I$ think that's a good idea, and I don't know if it's, you know, logistically a bad idea, but I would love to see more conversation around that sort of thing. Thank you.

CHAIRMAN NANCE: Thank you, Josh. Any other comments from the SSC or any other input from the public? Trevor, please.

MR. MONCRIEF: Just so everyone understands, and I know we've got some Science Center folks on the call, and I see that Richard is on here, and so, I mean, there is this work toward trying to get some independent effort estimate, and there is talk of, you know, us doing the LA Creel thing, but $I$ would say, you know, these conversations are --

They're happening, right, trying to figure out a way to really get down to this effort question, and, yes, logbook -- You know, it's got its pros and its cons, and it's exceptionally burdensome, and logistically a nightmare, but, I mean, it's one of those things that I'm sure will pop up in conversation over the next little while, as we begin going down this route, and so, like I said, for all the complaints that my state has had, as far as estimates go and the issues that we've been going through, I am optimistic with the direction that we're going and the future of it, and $I$ see a fair amount of cooperation that's occurring, and it's promising.

I think we'll be in a really good spot, but, you know, it's just what's it going to take to get there, and so that's it. I'm done, Mr. Chair. I won't comment again.

CHAIRMAN NANCE: Thank you, Trevor. With no other public comment, we'll go ahead and conclude the meeting. I appreciate all those with the presentations and the discussions, and I guess our next meeting together will be in February, and so I guess we'll talk to each other then, but thanks again.
(Whereupon, the meeting adjourned on October 4, 2023.)

