GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

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

GMFMC Office   Tampa, Florida

MARCH 8-10, 2022

STANDING SSC VOTING MEMBERS
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Lee Anderson...
Luiz Barbieri..
Harry Blanchet...
David Chagaris...
Roy Crabtree...
Benny Gallaway...
Douglas Gregory..
David Griffith...
Paul Mickle..
Trevor Moncrief..
Will Patterson...
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Steven Scyphers..
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Luke Fairbanks...
Cynthia Grace-McCaskey...
Jack Isaacs..

SPECIAL ECOSYSTEM SSC VOTING MEMBERS
Mandy Karnauskas...
Joshua Kilborn...
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22   Jim Zurbrick...............................Steinhatchee, FL
23
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2 PAGE 270: Motion that the SSC accepts the SEFSC catch analysis
3 and establishes an OFL based on the ensemble analysis using the
4 five-year average of 18.91 million pounds whole weight. The motion
5 carried on page 279.
6
7 PAGE 291: Motion that the SSC approves an ABC of 16.31 million
8 pounds whole weight of red snapper based on the five-year average
9 using the ensemble approach and a P* of 0.3. The motion carried
10 on page 307.
11
12   - - -
13

1 The Meeting of the Gulf of Mexico Fishery Management Council
2 Standing and Special Reef Fish, Special Socioeconomic & Special
3 Ecosystem Scientific and Statistical Committees convened on
4 Tuesday morning, March 8, 2022, and was called to order by Chairman
5 Jim Nance.
6
7   **INTRODUCTIONS**
8   **ADOPTION OF AGENDA**
9
10 **CHAIRMAN JIM NANCE:** Good morning, my name is Jim Nance, and I am
11 the chair for the Scientific and Statistical Committee of the Gulf
12 of Mexico Fishery Management Council.   We appreciate your
13 attendance on this webinar and input in this meeting. Representing
14 the council is Dr. Tom Frazer.
15
16 Council Staff in attendance include Carrie Simmons, John
17 Froeschke, Ryan Rindone, Lisa Hollensead, Jessica Matos, and Karen
18 Hoak.   Notice of this meeting was provided to the Federal
19 Register, sent via email to subscribers of the council's press
20 release email list, and was posted on the council's website.
21
22 This week's meeting will include the following topics: Review of
23 the Absolute Abundance of Red Snapper in Louisiana; Discussion of
24 Post-Stratification Results by the Southeast Fisheries Science
25 Center; FWC and Great Red Snapper Count Team of Florida Absolute
26 Abundance Data; Review of the Gulf of Mexico Red Grouper Interim
27 Analysis as a health check; Review of Terms of Reference for SEDAR
28 64, which is Southeast U.S. Yellowtail Snapper Update; Review of
29 Terms of Reference for SEDAR 85, Gulf of Mexico Yellowedge Grouper
30 Operational Assessment; Review of Characterizing Fleet Behavior
31 Using an Analysis of Vessel Monitoring System Data; Review and
32 Discussion of the National Academies of Sciences Report on the
33 Impacts of Limited-Access Privilege Programs in Mixed-Use
34 Fisheries; Evaluation and Update of the Southeast Fisheries
35 Science Center Catch Analysis of Gulf of Mexico Red Snapper, Using
36 the Great Red Snapper Count; and Review and Update of the
37 Development and White and Brown Shrimp Empirical Dynamic Models.
38
39 This webinar is open to the public and is being streamed live and
40 recorded. A summary of the meeting and minutes will be produced
41 and made available to the public on the council's website.
42
43 For the purpose of voice identification and to ensure you are able
44 to mute and unmute your line, please identify yourself by stating
45 your full name when your name is called for attendance. Once you
46 have identified yourself, please re-mute your line. To signal you
47 wish to speak during the meeting, please use the raise-your-hand
48 function, and the staff will display your name. Please remember

1 to identify yourself before speaking and also to re-mute your line
  2 each time you finish speaking. We'll go ahead and take care of
  3 that now, Jessica.
  4
  5 **MS. JESSICA MATOS:** Okay. Lee Anderson. Luiz Barbieri.
  6
  7 **DR. LUIZ BARBIERI:** Luiz Barbieri.
  8
  9 **MS. MATOS:** Dave Chagaris.
 10
 11 **DR. DAVID CHAGARIS:** David Chagaris.
 12
 13 **MS. MATOS:** Thank you. Roy Crabtree.
 14
 15 **DR. ROY CRABTREE:** Roy Crabtree.
 16
 17 **MS. MATOS:** Benny Gallaway.
 18
 19 **DR. BENNY GALLAWAY:** Benny Gallaway.
 20
 21 **MS. MATOS:** Thank you. Doug Gregory.
 22
 23 **MR. DOUGLAS GREGORY:** Douglas Gregory.
 24
 25 **MS. MATOS:** David Griffith.
 26
 27 **DR. DAVID GRIFFITH:** David Griffith.
 28
 29 **MS. MATOS:** Paul Mickle.
 30
 31 **DR. PAUL MICKLE:** Paul Mickle.
 32
 33 **MS. MATOS:** Trevor Moncrief.
 34
 35 **MR. TREVOR MONCRIEF:** Trevor Moncrief.
 36
 37 **MS. MATOS:** Jim Nance.
 38
 39 **CHAIRMAN NANCE:** Jim Nance.
 40
 41 **MS. MATOS:** Will Patterson.
 42
 43 **DR. WILL PATTERSON:** Will Patterson.
 44
 45 **MS. MATOS:** Sean Powers. Steven Scyphers.
 46
 47 **DR. STEVEN SCYPHERS:** Steven Scyphers.
 48

1   **MS. MATOS:** Jim Tolan.
 2
 3   **DR. JIM TOLAN:** Jim Tolan.
 4
 5   **MS. MATOS:** Rich Woodward.
 6
 7   **DR. RICH WOODWARD:** Rich Woodward.
 8
 9   **MS. MATOS:** Jason Adriance.
10
11   **MR. JASON ADRIANCE:** Jason Adriance.
12
13   **MS. MATOS:** Mike Allen.
14
15   **DR. MICHAEL ALLEN:** Mike Allen.
16
17   **MS. MATOS:** John Mareska.
18
19   **MR. JOHN MARESKA:** John Mareska.
20
21   **MS. MATOS:** Luke Fairbanks.
22
23   **DR. LUKE FAIRBANKS:** Luke Fairbanks.
24
25   **MS. MATOS:** Cindy Grace-McCaskey.
26
27   **DR. CYNTHIA GRACE-MCCASKEY:** Cindy Grace-McCaskey.
28
29   **MS. MATOS:** Jack Isaacs.
30
31   **DR. JACK ISAACS:** Jack Isaacs.
32
33   **MS. MATOS:** Mandy Karnauskas.
34
35   **DR. MANDY KARNAUSKAS:** Mandy Karnauskas.
36
37   **MS. MATOS:** Thank you. Josh Kilborn.
38
39   **DR. JOSH KILBORN:** Josh Kilborn.
40
41   **MS. MATOS:** Steven Saul.
42
43   **DR. STEVEN SAUL:** Steve Saul.
44
45   **MS. MATOS:** Tom Frazer.
46
47   **DR. TOM FRAZER:** Tom Frazer.
48

1   **MS. MATOS:** Thank you.
2
3   **CHAIRMAN NANCE:** Thank you. I will go ahead, and each of us have
4   looked over the agenda. Any changes to the agenda? Hearing none,
5   do we have a motion to adopt the agenda?
6
7   **DR. BARBIERI:** So moved, Mr. Chairman.
8
9   **APPROVAL OF VERBATIM MINUTES AND MEETING SUMMARY: JANUARY 11-13,**
10   **2022, MEETING**
11
12   **CHAIRMAN NANCE:** Do we have a second? Thank you. Is anyone in
13   opposition? Hearing none, the agenda is adopted, as posted. We
14   have all looked at the minutes and the meeting summary from our
15   January 11 through 13 meeting. Any changes to the minutes or the
16   meeting summary? Hearing none, do I have a motion to adopt the
17   minutes and the meeting summary?
18
19   **DR. CRABTREE:** So moved.
20
21   **DR. BARBIERI:** Second.
22
23   **SELECTION OF AN SSC REPRESENTATIVE FOR THE APRIL 4-7, 2022, GULF**
24   **COUNCIL MEETING IN GULF SHORES, ALABAMA**
25
26   **CHAIRMAN NANCE:** Thank you. Any opposition to approving the
27   minutes or the meeting summary? Hearing no opposition, those
28   meeting minutes and the meeting summary are approved. Selection
29   of an SSC Representative for the April 4 through 7 meeting of the
30   Gulf of Mexico Fishery Management Council in Gulf Shores, Alabama,
31   do we have any volunteers on the SSC to attend that meeting?
32
33   **MR. RYAN RINDONE:** Not all at once.
34
35   **CHAIRMAN NANCE:** Hearing none, I will be happy to go to it. I
36   wanted to give others an opportunity to go, if they wish, but I
37   will be happy to represent the council in Gulf Shores the first
38   part of April. Thank you. Each one of us can have the opportunity,
39   and I don't want to take all of it, but certainly you're welcome
40   to be able to present this to the council, and so thank you, but
41   I will be happy to go do that in Gulf Shores.
42
43   Ryan, let's go ahead and -- I think, in my mind, we'll do the scope
44   of work before each thing, instead of doing the whole scope of
45   work, and does that sound good?
46
47   **MR. RINDONE:** You got it.
48

1 **CHAIRMAN NANCE:** Okay, and so let's go ahead and do the scope of
2 work for Item Number V, which is the Review of Estimating Absolute
3 Abundance of Red Snapper off Louisiana, and we have Dr. Scott
4 Raborn here, and he'll be presenting, and, Ryan, go ahead and give
5 that overview of the scope of work, please.
6
7   **REVIEW: ESTIMATING ABSOLUTE ABUNDANCE OF RED SNAPPER OFF**
8   **LOUISIANA**
9
10 **MR. RINDONE:** Yes, sir. Thank you, Dr. Raborn, for coming back,
11 and he'll be presenting today the study design associated with LGL
12 Ecological Research Associates' work to generate an estimate of
13 absolute abundance of red snapper off Louisiana, and this study
14 was funded directly by the State of Louisiana, through the
15 Department of Wildlife and Fisheries.
16
17 The LGL team will also present their responses to the peer review
18 and SSC comments made during the initial review of this project at
19 the SSC's September 2021 meeting. The team will then present a
20 revised estimate of absolute abundance for red snapper off
21 Louisiana, included an updated variance estimate, and you guys
22 should evaluate all this information and make any recommendations
23 to the council about the integration of this study in the near-
24 term and recommendations for future consideration of the data, as
25 an example perhaps, for SEDAR 74.
26
27 The SSC may also consider whether to use the state-specific
28 estimate as a proxy for the estimate for Louisiana from the Great
29 Red Snapper Count, which is being considered for revising catch
30 advice later in this meeting. Mr. Chair.
31
32 **CHAIRMAN NANCE:** Thank you. Dr. Gallaway, I know you're on the
33 line, and, if you wish to butt-in or anything during the
34 presentation, just raise your hand, and Jessica will inform me,
35 but I will go ahead and turn the time over to Scott now, at this
36 time.
37
38   **PRESENTATION: STUDY DESIGN**
39   **PRESENTATION: RESPONSE TO PEER REVIEW AND SSC COMMENTS**
40   **PRESENTATION: REVISED ESTIMATE OF ABSOLUTE ABUNDANCE**
41
42 **DR. SCOTT RABORN:** Thank you, Mr. Chairman.
43
44 **MR. RINDONE:** Dr. Raborn, if I can jump in, just so that everybody
45 knows, this is the same file is -- The presentation for the study
46 design, the response to comments, and the revised estimates, and
47 so it's all the same file. When you click on it, it all comes up
48 with the same title slide.

1
2 **DR. RABORN:** All of these agenda items sort of bled together, and
3 I hope to cover all the major concerns with this one presentation,
4 but, if anybody has any specific questions about the response to
5 peer-review comments, we're supposed to have that file up, and we
6 can switch over and look at that too, after this initial
7 presentation is over.
8
9 Most of the SSC comments and criticisms had to do with the
10 vagueness of the study design, or sampling approach, and how this
11 was incorporated into the modeling, and so that's what I hope to
12 achieve with this presentation, and so I want to clearly describe
13 the study design, explain how it came about, and our rationale
14 regarding our final approach, and, along the way, I will try to
15 highlight what we think the major potential -- How we avoid these
16 major potential biases and what the SSC's concerns were.
17
18 Ultimately, this study was designed for a model-based inference of
19 red snapper abundance, based on the field surveys from two separate
20 responses. One was from the hydroacoustic surveys, and that gave
21 us estimates of total fish density, and the other was the use of
22 submerged rotating cameras to help us apportion this total fish
23 density across species, and so everything that was red snapper
24 versus everything that wasn't, and it's essentially a binomial
25 response.
26
27 Then, along the way, we collected age, length, and growth, at the
28 same sites chosen to estimate these -- To take our hydroacoustic
29 and SRV surveys, the vertical hook-and-line sampling, and that was
30 for the discrete habitat types, which is artificial reefs and
31 platforms and natural banks, and then we used bottom longlines for
32 the uncharacterized bottom.
33
34 In our sampling design, our primary objective, obviously, was to
35 make our samples representative of the population, but, also, to
36 do that while coming in within budget, and, in order to do that,
37 we had to make some sacrifices with respect to the randomness of
38 some of the site selection for some of the habitat types, and I
39 have it highlighted in red, because this was a major criticism
40 from the SSC, and so we'll proceed to show how we don't think this
41 was a problem, in terms of biasing the overall estimate.
42
43 One of the reasons we don't think this is because, even though
44 some of these sites were not selected at random, none of our site
45 selections were informative. We didn't choose any site based on
46 our preconceived idea of where the red snapper densities would be
47 high or low, and, if that's the case, there's nothing that can fix
48 that, really.

```
 1
 2  During the process, some of these sites were not selected as
 3  random, as I said, and they were selected purposely to make sure
 4  that we represented certain habitats opportunistically, to reduce
 5  costs, and I will explain why that's not a problem.
 6
 7  First, how we stratified, our initial stratification scheme, we
 8  had three longitudinal regions of western Louisiana, central, and
 9  east, and, ultimately, three depth zones of ten to twenty-five
10  meters, twenty-five to forty-five meters, and forty-five to 150
11  meters.
12
13  Initially, five habitat types were selected of standing platforms,
14  natural banks, pipeline crossings.  Though they weren't ultimately
15  used in the final analysis, they did affect our choosing of the
16  other two habitat types, the remaining two, of artificial reefs
17  and uncharacterized bottom.
18
19  At each site, we took both hydroacoustic and SRV samples at each
20  ten-meter vertical depth bin, and so, at each site, we had multiple
21  observations, for most of them.  Some of the shallow sites only
22  had one depth bin, but just about all of the sites had multiple
23  depth bins, and this was another issue pointed out when we first
24  presented these results, that we were collecting multiple
25  observations at a given site, and therefore opening ourselves up
26  to pseudoreplication and autocorrelation and so on and so forth,
27  but I will show how this issue was dealt with during the model
28  specification.
29
30  Hook-and-line sampling, of course, we couldn't parse that into the
31  vertical depth bins, and, though we sampled at each depth bin, and
32  this is sort of a categorical variable, ultimately, it was turned
33  into a continuous variable, by measuring the distance from the
34  bottom to the center of each depth bin, and we call this continuous
35  variable meters from the bottom, or MFB.
36
37  One of the things that was requested from the SSC, the last time
38  we presented, was a table showing how sites were allocated across
39  the different strata, and so, on the far left column, I have them
40  separated by the west, central, and east, and then shallow, mid,
41  and deep, and across the top is across habitat types, and that's
42  the number of sites chosen within each of those stratum, or
43  categorical variable combinations, and so there were no artificial
44  reefs that we could find in the shallowest zone, the ten to twenty-
45  five meters, and then only in the deepest zone were there natural
46  banks.
47
48  For the other habitat types, they occurred in all regions and depth
```

1 zones, and you can see how many sites were chosen in each of those.
2 There were more platforms chosen than anything else, because we
3 augmented our 2020 sampling with platforms that we had sampled
4 during a BOEM -- An investigation that we did for BOEM back in
5 2017 and 2018.
6
7 Here is how they finally broke out, and this is the allocation of
8 sites, and I won't pause on this very long, and I believe you all
9 have copies of this presentation, and you can ask me about it later
10 if you want, and so I will just move on.
11
12 Site selection, this is the universe of platforms available in
13 2020, and then the red dots are the sites that were chosen to
14 sample, and so, for platform selection, this was a stratified
15 random sample of the platforms that were out there, and the number
16 of platforms within each of these strata was apportioned based on
17 how many platforms in the universe occurred in that particular
18 stratum.
19
20 The same with natural banks, and, as I said, all of them occurred
21 in the deepest depth zone, and so we initially chose a natural
22 bank, two in both the west and central region, and one in the east.
23 We randomly chose those, and then, off of that, we randomly chose
24 two other sites, and so we sampled three sites in proximity to the
25 initial random selection. The blue areas are the universe of
26 natural banks, and the reds are the sites that were chosen -- That
27 we chose to sample.
28
29 The pipeline crossings, essentially, they chose a transect, or a
30 pipeline, that traversed all the different depth zones, for each
31 of the regions, and so here's a UCB slide, but you can see these
32 red slides that go across each of the middle of the zones, and
33 those are the pipelines that were chosen to sample, and, along
34 those pipelines, and I will back up to the universe of pipeline
35 crossings, along those pipelines, we randomly selected sites on
36 that transect to sample pipeline crossings.
37
38 Then, off of these pipeline crossings, in proximity to this, we
39 wanted to make sure that we captured the range, or the mixture, of
40 substrates that were out there, and so here is a coverage of the
41 different substrate types that we had available, and I will talk
42 more about this later, but it turns out that it wasn't resolute
43 enough, and it was too coarse to really predict what was going to
44 be there at a particular site, but we did use it to choose where
45 we were going to put the uncharacterized bottom sites.
46
47 Coming off of the selection of pipeline crossings, that had
48 influence on where we chose to sample uncharacterized bottom, and

14

1 so that's why they're sort of clustered close to the pipeline
2 crossings, and so you could say that uncharacterized bottom was
3 chosen opportunistically and purposely placed on a variety of
4 substrate types.
5
6 Then, also, in relation to the pipeline crossings, to reduce costs
7 and travel time, artificial reefs were chosen in proximity to where
8 those crossing sites occurred, and then, once they were chosen,
9 sites were -- Once the initial artificial reef was chosen, then
10 more sites were chosen in proximity to that, and they look really
11 close together, because it's pulled back, but they were chosen at
12 random distances.
13
14 It may occur to you that the non-randomness of the site selection
15 would bias our results, but we're going to rely on a fisheries
16 approach to this, and it requires a -- I mean, for some of this,
17 for some of you, this is a review, and you don't need it, and for
18 others we do need to review how to choose an inferential framework
19 from survey data, and so I'm just going to briefly go through this.
20
21 When you're trying to extrapolate an estimate from a survey to a
22 population, you can use one of two approaches, and the first
23 approach was championed by J. Neyman and E. Pearson, and this is
24 a design-based inference, and the second was championed by R.A.
25 Fisher, and it was a model-based inference, and the distinction
26 between these two, and how these two approaches are related to the
27 model specification, is often omitted, and we were guilty of that
28 the last time we presented our results, and so that's something
29 that I hope to rectify.
30
31 First, I want to review the design-based inference, and so, with
32 a design-based inference, the values of the sampling units
33 themselves are fixed, and so the uncertainty in your estimate comes
34 from the randomization of your sample selection, and so, if you
35 use anything other than a simple random design, it has to be
36 incorporated into your estimation process, to get a design unbiased
37 estimate, such as a systematic sampling design or a stratified
38 random sampling design, but, nevertheless, you still get an
39 unbiased -- A design unbiased estimate, as long as you incorporate
40 important selection strata into that estimate.
41
42 The researcher is really not really worried about what is causing
43 the response to change from one site to the next, whether it's
44 physical or chemical variables or distance to a fishing port or
45 whatever. As long as it was sampled randomly along this range of
46 influences, you're still going to get an unbiased estimate, but
47 the problem is you have to have enough samples to make sure you
48 cover that range of all the influences that are going to impact

1   the response, and so that's a design unbiased inference.
2
3   A model-based inference, the sample selection is held fixed, and
4   you're assuming that the randomness is coming from a stochastic
5   process at that site itself. In other words, if you repeatedly
6   sampled at that site, you're going to get a different answer each
7   time, and you're trying to account for what is controlling the
8   change in that response.
9
10   With a model-based inference, you can still get an unbiased
11   inference, and you can still extrapolate the survey data to a
12   population inference, as long as you meet certain conditions, and
13   that's what Fisher's argument was, and that's what I will go over
14   now.
15
16   The first thing you have to do is formulate a statistical model
17   that has all the terms that are ecological important that describe
18   the system and their interactions and all of the terms that were
19   important, all the strata that were important, in the selection
20   process, just like you do in a design-based inference. You
21   stratify by depth zone, and you need to have that in the model and
22   so forth.
23
24   Once you have your model specification determined, then you have
25   to assume some sort of parametric distribution for error term,
26   which generates a random dependent variable, and that can be a
27   normal distribution or a binomial distribution or Poisson, or so
28   on and so forth, and I will review what distributions we chose for
29   our models in a moment, but, finally, you have specified a model,
30   and you have chosen an appropriate parametric distribution, but
31   now you have to meet what Fisher called his conditionality
32   principle, if you want it to be a model unbiased estimate.
33
34   That conditionality principle can be compromised under three
35   circumstances, and one is, like I said, if your sampling units
36   were stratified before selection, and this deviates substantially
37   from the simple random sampling design, these strata need to be
38   included in the model, and so the second one is that sometimes,
39   invariably, in ecological studies, units are clustered in groups,
40   and it compromises the independence of each sampling unit, or
41   experimental unit, and you have to somehow account for this
42   correlation among observations, and, in our study, this happened
43   because we sampled multiple times at a given site, or a platform,
44   and, well, this is okay, as long as you include a random effect to
45   account for this correlation, which we did.
46
47   Then, finally, as I said before, if your selection of sampling
48   units is influenced by the unit values themselves, if you select

sites based on what you think the response is going to be there, then it's informed sampling, and it's very difficult to fix, but this didn't happen.

The advantages of a design-based inference are you can avoid the subjectivity that comes with making these assumptions about the response distribution, whether it was a Poisson or an overdispersed Poisson or whatnot, and you don't have to worry about all the myriad of possible model specifications and correct conditioning on all the selection and design variables.

A lot of times, when you try to account for these random effects in a model, it just swallows degrees of freedom, and you can't create enough model complexity to accurately represent what you're trying to represent, and then, if you unknowingly leave out some important auxiliary variable, an extraneous nuisance variable, then you can get a biased estimate, and so that's the advantages of a design-based inference.

The disadvantage is that you can't always do empirical random sampling, and, even if you can, you can't have enough samples that completely capture the range of everything that could be possibly controlling your response, and it doesn't allow you to look at your important auxiliary variables or any particular interactions that you might be interested in, and so we didn't really have a choice, and we had to use a model-based inference, and so that's what we did.

Now, I will go over the model specifications in a moment, and so our premise hinges upon the fact that we had an appropriate model specification, but, before that, there is a few more things that I need to make note of, in terms of post-processing the data, and the first thing is that our pipeline crossing idea didn't work out, and, basically, how this went down was that we first used pipeline crossings as sort of like standing platforms, and we wanted to make sure we captured that, and, as long as you include that as a strata, a factor in your model, it's fine, but a platform -- We have a better handle on it.

I mean, when you show up and you see the platform there, it's there, and you tie up to it and you sample it, but, over these pipeline crossings, we got the coordinates from BSEE, or BOEM, and it was clear that some of them were still buried underneath the substrate, and others weren't, and so it turns out that it was a more intractable variable than we initially conceived, and we weren't going to be able to treat it as we did say an artificial reef or a platform.

17

1 Another thing is we noticed that, when we finally got out into the
2 field, some of the sites that we had chosen were less than 400
3 meters apart, and, at some point, sites become too close together
4 to be considered independent, and, based on a survey of the
5 literature, it seems like anything greater than 400 meters apart
6 could be considered an independent sample, based on other reef
7 fish studies, and so there were some artificial reef sites that
8 were less than 400 meters apart, and we had to combine them, and
9 so that reduced sample size for that particular habitat type a
10 little bit, and then, finally, there was one platform that was
11 less than 400 meters from an artificial reef site, and so we
12 deleted that one, because we had more platforms than we did
13 artificial reefs, and so that's how we addressed that issue.
14
15 Now I will go into the model specification, and, first, I will
16 review the independent variables and then go into the model
17 specification, and so, in the final models, we used all the
18 stratifying variables that we just mentioned. We used the habitat
19 types, sans the pipeline, and we used the continuous variable of
20 meters to the bottom, and then we used dissolved oxygen and
21 salinity.
22
23 Site was -- These were all fixed effects, these first three
24 bullets, and site was included as a random effect, which we let
25 the intercept vary randomly around, and this helped to control for
26 the pseudoreplication aspect. Platform complexity was sort of
27 intractable as well, because you don't know how complex a platform
28 is underneath and how many crossbeams there are, and so we really
29 couldn't get a handle on that.
30
31 Then, ultimately, substrate type was not used, because it was just
32 too coarse to tell us what the substrate was at an individual site,
33 and, from the map, the coverage that we used, it might say sand,
34 but, really, it could easily be mud or whatever, and we just didn't
35 know, and it turns out that it didn't explain much of the variance
36 in the models at all, and so, ultimately, we didn't use substrate
37 type.
38
39 Then temperature was colinear with dissolved oxygen and salinity,
40 to the point of unacceptability, and I would also reason that, if
41 you're trying to capture the effects of this physical and chemical
42 variables, dissolved oxygen and salinity is probably better to do
43 that, if you're looking at the influence of the Mississippi River,
44 say, in the eastern part of Louisiana, or hypoxia, and so,
45 ultimately, temperature wasn't used, because of collinearity.
46
47 I hate to do this to you, but I reported this model specification
48 as R code, and I did that because what we wound up using was a

1 generalized additive mix model, and these things become harder to
2 write out in equation form, as you're used to seeing, and there
3 are a few people listening, or watching this, that will understand
4 this R code and would want to see the specifics, but, for those of
5 you who don't, I will just walk through each piece of it.
6
7 Basically, what this is saying is that the proportion of red
8 snapper at a given site was distributed as a generalized additive
9 model, where RS is the number, actual number, of red snapper that
10 we observed on the SRV camera at a particular depth bin divided by
11 the total number of fish that we observed on the SRV camera at a
12 particular depth bin, and that was equal to the factor region, the
13 three of east, west, and central, and the factor depth zone,
14 habitat type, and then this next term of S(dissolved oxygen) is a
15 spline function for dissolved oxygen, and this spline was basically
16 a thin-plate regression spline, and its complexity was controlled
17 with the k equals five and the m equals one parameters.
18
19 The bs equals tp indicates that it was a thin-plate regression
20 split, and the k equals five limits the degrees of freedom to no
21 more than four, one minus k, and so it limits the complexity of
22 that spline, and then the m equals one controls how you penalize
23 that spline, and so the model is trying to make this line wiggly
24 enough to fit the response to this covariate, but it doesn't -- It
25 penalizes it if it becomes too wiggly, if you will, and so it tries
26 to maximize the restricted maximum likelihood to do this.
27
28 I know that's a little bit hypertechnical for some people, and not
29 others, but, nevertheless, that's how we fit each of those
30 covariates, and, using the m equals one, it tells it to penalize
31 the first derivative, and it helps with something called
32 concurvity, which is sort of tantamount to collinearity, and I
33 will discuss that later.
34
35 Then we used the same -- We entered the same term for salinity,
36 and we used a thin-plate regression spline for salinity and for
37 meters from the bottom, but we interacted meters from the bottom
38 with habitat type, figuring that how the proportion of red snapper
39 in the water column might change depending on what habitat type
40 you were in, and then, finally, site was entered as a random
41 intercept, and this random effect of site controls for multiple
42 observations at a given site, and, moreover, the literature shows
43 that, when you enter the effect of multiple observations, if they
44 are, for lack of a better term, in a row, as you go down the water
45 column, as we did with the MFB term, this also helps to control
46 for correlation in the errors, and so, between these two, you've
47 got a pretty good handle on controlling for pseudoreplication or
48 autocorrelation.

1
2 The proportion of red snapper at a given site was a binomial
3 response, which uses a logic function, and weights indicates the
4 total, and then the rest is just particulars of the algorithm.
5
6 We used the same model specification for total fish density, and
7 I think there was a typo in the report. When I copied this model
8 over, or the text over, I think I didn't change it to "TFD" in the
9 report, and so apologies, but this -- The only thing different
10 here would be the type of distribution we chose for the response,
11 and so this is -- Total fish density is fish per cubic meter, and
12 we used a Tweedie distribution to represent this response. Other
13 than that, everything is the same as the other model.
14
15 We fit these models to the data, and then we conditioned them upon
16 setting the random effect of site to zero, as opposed to
17 integrating across all sites, and so we're drawing a broad
18 inference, and, as Statistician Stroope describes it, we're
19 drawing a broad conditional inference, which is basically equal to
20 the median of the marginal distribution across these sites, as
21 opposed to, if you integrate across all the sites, average across
22 them, you would be -- That's kind of nuanced, but nevertheless.
23
24 Then we use the average values of the covariates at each of the
25 combination of strata, including the depth bins, and so the average
26 is all batched in an average salinity, average meters from the
27 bottom, and so on, and then we predict, off of this average matrix,
28 and we get our results.
29
30 This figure shows the change, and we converted total fish density,
31 or we multiplied total fish density times the proportion of that
32 density with red snapper, and then we converted that density to
33 meters squared, cubic meters to 100 meters squared, and that is
34 what is reported on the Y-axis, and on the X-axis is meters from
35 the bottom, separated by the depth zones and the habitat types,
36 and, in general, you see a decline as you move away from meters
37 from the bottom, where they generally peak at around five to
38 fifteen to twenty meters off the bottom, depending on which depth
39 zone or habitat type you're in.
40
41 If you sum across these, the depth bins, you get our final
42 estimate, which is a bit hard to see maybe in the presentation,
43 but I think it came out to be 8.4 million, and so 8.4 million
44 across the entire study, ranging from about six to eleven million,
45 and another thing to note is that, if you look at the density of
46 red snapper per hundred meters squared, that's in that first column
47 of numbers, and you can see the yellow bars to indicate magnitude,
48 and that's how the density is distributed across habitat types,

1 depth zones, and regions.
2 \
3 You can see the highest densities of red snapper is on platforms
4 on artificial reefs, and the lowest is on natural banks and
5 uncharacterized bottoms, but, once you multiply those densities
6 times the amount of habitat that exists, you get a very different
7 answer in the very far-right list of numbers, where most of the
8 fish are occurring over uncharacterized bottom, and so we've got
9 7.4 million is what we estimate for uncharacterized bottom across
10 all of the strata.
11
12 If you average the values across all the regions and the depth
13 zones for uncharacterized bottom, I come up with 183 red snapper
14 per kilometer squared, which is exactly what the Great Red Snapper
15 Count came out to be, and I thought that was an interesting
16 artifact.
17
18 The difference between the two numbers then ultimately was the
19 amount of habitat that was estimated for each study. The biggest
20 discrepancy is the natural banks, and the Great Red Snapper Count
21 was however many times greater, in terms of density for natural
22 banks, but one explanation for that could be that a lot of the
23 natural banks that they extrapolated from in Texas are in the ideal
24 red snapper depth zone, whereas the natural banks in Louisiana are
25 right on the shelf edge, and so outside of the range of their
26 maximum depth.
27
28 That is the final numbers that we came up with, and things that we
29 didn't talk about, or I didn't cover in this presentation, and,
30 the last time we presented, the SSC talked about how SRV may
31 inaccurately represent the apportionment of species, and we can
32 talk about that if you like, but, also, they talked about how our
33 age and growth estimates might be biased, because of hook
34 selectivity, and that may be true, and I can't say that didn't
35 happen.
36
37 When I look at -- Is there a way that I can switch over to the
38 report? If we could go down to some of the length and age plots
39 and the results, when I look at -- I will wait until you get to
40 those plots.
41
42 When I look at hook selectivity studies, and I looked at Patterson
43 in 2012, I believe, and Campbell a few years later, and more
44 recently, and I apologize to the scientist for the most recent
45 selectivity paper on red snapper, but I can't think of the name,
46 but they all -- Once you convert them to total length, they all
47 show that -- They all use a Number 9 or Number 8/0 hook, and I
48 know that hooks are not the same across companies, but just the

1 number doesn't mean that it's all standardized, but, still, they
2 all show that there are most selective for around the average size
3 of age-two red snapper, and we used the size-8 hook and then a
4 size even smaller, a size-6 hook, and so, if it was just based on
5 hook selectivity, you could say that our age and length
6 distributions are biased low, and, if it were just talking about
7 natural banks in the deepest water out there, I could buy this,
8 that this was the true age composition and the true length
9 composition, but, if we could go to the platform side.
10
11 If you're going to see age-two red snapper, you would expect to
12 see them on standing platforms, and they just -- The threes are
13 there, and the fours are there, and the fives are there, but then
14 it just drops off at age-two.
15
16 Like I said, if our hook selectivity were greatest for age-two,
17 then what is the deal? How did that compare? Is there just a
18 missing cohort, or -- I mean, but hook selectivity is a context
19 selectivity curve, and it just tells you how well it's going to
20 retain a fish, given that two different sizes bite the hook, and
21 it doesn't tell you anything about availability, and you can't
22 apply it to the population, and so age-two red snapper were closer
23 into the platform, and they're just not going to be as available
24 to be caught with hook-and-line, and so this indeed may be biased
25 high, in terms of age and size for standing platforms, but, on the
26 other hand, standing platforms weren't the majority of the fish
27 that were caught, or that were estimated to be in the State of
28 Louisiana over this uncharacterized bottom.
29
30 With that, I think I will just open it up to questions, Mr.
31 Chairman, and I can -- Like I said, I can switch over to the
32 comments presentation that we submitted to the State of Louisiana,
33 if someone has a particular question on that slide there or the
34 report.
35
36 **CHAIRMAN NANCE:** Thank you very much for that presentation. It
37 was excellent. Luiz, you had a comment?
38
39 **DR. BARBIERI:** Thank you, Mr. Chairman. Scott, just real quickly,
40 just a clarification, and, in Slide 10 of the presentation, when
41 you have the allocation of sites and the sampling allocation, just
42 to clarify my understanding, open bottom is UCB?
43
44 **DR. RABORN:** Yes, that's UCB, and I apologize.
45
46 **DR. BARBIERI:** Okay. Thank you.
47
48 **CHAIRMAN NANCE:** Okay. Thank you. Any discussion on the

1 presentation? If you have a specific question -- We've each had
2 the opportunity to look over reviewer comments and response to
3 those, and so, if you have a particular question on that, and I'm
4 not going to go over those one-by-one, but, if you have a specific
5 comment on those, or a question, please ask, and then we'll go
6 into discussion. Sean, please.
7
8 **DR. POWERS:** On this allocation of sites, did you all increase the
9 number of sites between the reports, or is this still 108 sites?
10
11 **DR. RABORN:** This was the initial allocation of sites, and this
12 number got reduced because sites were combined, and, in particular,
13 one platform was dropped.
14
15 **DR. POWERS:** Okay, and so that's 130 sites there, and my math might
16 be off a little bit, and so there were sites that were -- What was
17 the original pool, this, and then you couldn't hit all of those
18 sites?
19
20 **DR. RABORN:** No, and the original pool was that, and we sampled
21 all of those, and then some of those sites were combined, because
22 they were too close together, and I failed to mention that we
23 paired the --
24
25 **DR. POWERS:** I've got you, and so that's the discrepancy in the
26 number. It would be more, because, post hoc, you all decided that
27 the sites were too close together.
28
29 **DR. RABORN:** Yes.
30
31 **DR. POWERS:** I've got you, and you went over that, but I just
32 didn't make that connection, and sorry about that, and so, in the
33 model approach you had, you said it's important to put all the
34 factors in, as well as their interaction, and so were you able to
35 -- Some of these sample sizes in the different strata were fairly
36 low, and were you able to get all the interactions in the model?
37 I mean, you can show the R code again for the model, but I was
38 just wondering which interactions did you put in the model?
39
40 **DR. RABORN:** It would have been nice to get an interaction of all
41 habitat type, depth zone, and region, but it just -- Like you said,
42 the data are too sparse, and so we chose to interact meters from
43 the bottom with habitat type, because we figured that red snapper
44 -- Total fish density and proportion for red snapper both would
45 change differently along the vertical depth distribution for say
46 a platform than it would the open bottom.
47
48 **DR. POWERS:** So how that affect your statement that, in the model-

23

1 based inference that you all chose to do, that one of the cautions
2 is to include all of those interactions?

3

4 **DR. RABORN:** Well, you don't -- I mean, you certainly have to
5 include the stratum that you used, and you have to include
6 important interactions, and we included the most important
7 interaction that we could include, and you try and use the greatest
8 model complexity that the data will allow, but you can't --
9 Sometimes you just can't include every interaction, and one of the
10 things that limited us was your sample size to parameter ratio,
11 and the absolute lowest you can go on that ratio is three, and so
12 ours was three-point-something for one model, and four for the
13 other, and I can't remember, but we couldn't add any further
14 interactions. For one, it wasn't significant for some of them,
15 and, two, adding it just increased the model complexity too much.

16

17 If you look in the report, at how well the model fit the data, and
18 all the different diagnostic tools you would use, such as
19 overdispersion, zero inflation, or just fit overall, if you had
20 missed -- If we had missed some important interaction, or
21 misspecified a term, it would show up in some of those -- More
22 than likely, it would show up in one of those diagnostics, and all
23 those diagnostics seem to look pretty good.

24

25 **DR. POWERS:** So one more, and so the big discrepancy, and I haven't
26 been able to compare all the revised numbers to the Great Red
27 Snapper Count, is on the natural bank, right?

28

29 **DR. RABORN:** Yes, I believe so, that that was the biggest -- Can
30 we go to the report? There's a table. If you go to the discussion,
31 there is a comparison of these numbers to the Great Red Snapper
32 Count, and so you see that we compare our estimates of how much
33 the amount of habitat, what's out there for each, and so did our
34 numbers differ because we estimated a different amount of habitat,
35 or did they differ because we estimated different density?

36

37 You will notice, like I said, for uncharacterized bottom, we came
38 up with the exact same density that you rounded, 183 per kilometer
39 squared, and so you came up with 9.7 million, and we came up with
40 7.4 million, but that's just a function of how much habitat you
41 estimated to be out there, and so it looks to me like the greatest
42 discrepancy is the natural banks estimate.

43

44 **DR. POWERS:** Okay, and your CVs, or your estimate, did they change
45 between the report, the first draft and this draft?

46

47 **DR. RABORN:** It's still pretty close to about 14 percent, and these
48 CVs are -- As I described in the report, they were point-wise

confidence intervals, as opposed to simultaneous, but, as the
literature points out, the guy that wrote the package for R and
another statistician point out, this is based on a Bayesian
posterior matrix, and you don't interpret it in the traditional
way that a frequentist would interpret it.

It has better coverage, what they call across-the-function
coverage, and so, across the range of dissolved oxygen or
temperature or whatever, a 95 percent confidence interval, even
though it is a point-wise estimate, it's still going to more or
less cover 95 percent of the observations, although there may be
clusters of areas where that's not true, but, over the whole, it
is. Because we used the average, you're going to have the best
estimate towards the average for those covariates, and so I feel
like this is a reasonable estimate of uncertainty.

DR. POWERS: Okay. Thanks.

DR. RABORN: It's certainly a minimum estimate of uncertainty, and
I wouldn't call it a maximum estimate, and I didn't mention the
mark-recaptures and how they related to our modeled estimates,
but, if you look in the report --

DR. POWERS: The mark and recapture was only for the platforms?

DR. RABORN: It was for the platforms and the artificial reef. On
the left side, see that I've got two colored columns there, and on
the right is the modeled estimated from the hydroacoustic and SRV
surveys, and, on the left, we've got various mark-recapture sites
for each of those strata combinations, and I took the geometric
mean across those, and I felt that was more comparable, if we're
getting a median of the marginal distributions from the model, and
I'm not 100 percent on that, but that seemed to make sense to me.

In the middle, I just gave the ratio of the highest estimate to
the lowest estimate between the two, and the highest ratio there
looks like it was 3.4, but it was within an order of magnitude,
and some of them were spot-on. Given that the mark-recapture
estimates were pretty similar to our model output, and given that
our UCB estimates were very similar to what was estimated for the
Great Red Snapper Count, we're starting to get in the ballpark, I
think.

DR. POWERS: Okay. Thanks.

CHAIRMAN NANCE: Thank you, Sean. Josh.

DR. KILBORN: Thank you. Great presentation so far. I know you

already covered this, but I guess I'm confused, and I was hoping
that you could kind of walk me through the meters from bottom
variable again and why you chose to use that, as opposed to just
the depth at the site or something like that.

DR. RABORN: Well, the depth at a given site -- The total depth at
a given site was handled with the depth zone, and we binned the
influence of total bottom depth into three depth zones, but that's
separate from how the fish may distribute themselves throughout
the vertical column, right, and so we had to sample that discretely
at ten-meter depth bins, and I think five meters would have been
better, but we did ten-meter depth bins, but, if you include that
as a categorical variable, some of those sites had ten or eleven
depth bins, and there is a parameter for each one of those, and so
you just crank up the number of parameters that you have to
estimate.

Then sometimes, even though we got an estimate for hydroacoustics
at a given depth bin, we didn't have a value from the SRV data,
and so you would have had to just borrow the value above it or
beneath it and apply it, and I felt like it was better to just
treat this as a continuous variable, and it solved the -- It
reduced the number of parameters that we had to estimate, and it
solved the inconsistency in simultaneously observing fish in the
SRV and the hydroacoustics issue, and so that was my rationale.

DR. KILBORN: Thank you.

CHAIRMAN NANCE: Any other questions or comments on the
presentation and the report? Okay. Let's go ahead, and, from the
SSC, we need to have a discussion, and we need to evaluate the
information presented, and we need to make recommendations to the
council about the integration of this study in the near-term and
future considerations of this data, and then we also need to
consider whether to use this data as a proxy for the estimate of
Louisiana, which is being considered for our estimation of
abundance, and so, SSC members, we need to have discussion on those
topics. I will open the floor up for discussion. Roy.

SSC DISCUSSION

DR. CRABTREE: Well, I mean, there are substantial differences in
the estimates, for sure, and it looks like it's the -- If I
understand it properly, it's the difference in catch rates over
the natural banks, but also on the artificial reefs and platforms.

Now, there's a whole host of issues with random versus the model
inference and how well all of that is met that really I don't feel

1 like I have the expertise to reach conclusions on that, and then,
2 with the Stunz study, you have the problem that they are, I guess,
3 imputing data from Texas areas, which may or may not very well
4 reflect the catch rates in Louisiana.
5
6 I am not sure how to reconcile this, and certainly it's desirable
7 to have the catch rates estimated from Louisiana, as opposed to
8 imputing from Texas, and so that's the main advantage that I see
9 with what Scott has presented to us, but there, obviously, are
10 more complicated issues, in terms of the approaches in the two
11 studies and how the strata were determined and those kinds of
12 things that I can't really reach a very firm conclusion about it,
13 but, to me, this is just part of the overall uncertainty that we
14 are faced with when trying to figure out what to do with this
15 absolute abundance estimate, because, clearly, this gives us cause
16 to believe that, at least for Louisiana, the Stunz study may be
17 overestimating abundance.
18
19 I don't know if that's the case or not, but this certainly
20 indicates that, and then, later, we'll get into the discussion of
21 some of the things the Center did, and P* and looking at the
22 uncertainty, but this is the sort of uncertainty that I don't
23 believe is incorporated in any of that, and I think, as our
24 discussion goes along, that's really going to be the heart of this
25 issue, because I don't know that we're going to be able to resolve
26 a lot of these questions, and then we have this very large and, to
27 some extent, unquantified amount of uncertainty, and how do we
28 factor that into where we go from here and into whatever advice we
29 give the council?
30
31 **CHAIRMAN NANCE:** Scott, to that point, please?
32
33 **DR. RABORN:** Thank you, Dr. Crabtree. Keep in mind that any
34 problems from the non-random nature of our sampling would have
35 affected our platform estimates the least, because the platform
36 estimates were truly a stratified random sample, and it would have
37 affected the uncharacterized bottom estimates the most, because,
38 for them, that's where we use the most opportunistic sampling.
39 The uncharacterized bottom estimates were identical to the Great
40 Red Snapper Count.
41
42 **DR. CRABTREE:** What about the natural bottom?
43
44 **DR. RABORN:** The natural banks?
45
46 **DR. CRABTREE:** Yes, the natural banks.
47
48 **DR. RABORN:** They also suffered from a non-random -- No, we did

1 sample them randomly, and that's right. I was thinking of
2 artificial reefs, and those were sampled randomly, and the sites
3 were chosen randomly, and then adjacent sites were chosen off of
4 that, at random approximate distances, but, like I said, our best
5 explanation for why those two numbers differ -- I think the amount
6 of habitat type may have been different, but the biggest difference
7 was the density, and, as I recall, the Great Red Snapper Count is
8 basing the densities on natural banks in the ideal depth zones for
9 red snapper, and so thirty to say ninety meters, and I can't
10 remember, but all of our natural banks occur right on the shelf
11 edge, in the deepest zone we had, which is getting out of the range
12 of red snapper depths, and so you would expect our densities to be
13 lower on natural banks than you would say on natural banks that
14 were further inshore.
15
16 **CHAIRMAN NANCE:** To that point, Scott, are there natural banks
17 closer in depth that were not sampled?
18
19 **DR. RABORN:** No, and we sampled the universe, and we chose the
20 universe -- I showed the universe, and we can look at the
21 presentation again and show that map, and it's toward the
22 beginning. That's it right there.
23
24 That is the universe of natural banks within Louisiana, and the
25 pink triangles are the ones that were sampled, and the blue
26 represents unsampled natural banks, but you can see how they're
27 all located out in the deepest areas.
28
29 **DR. CRABTREE:** What is the depth of the deepest area? Exactly
30 what range are you talking?
31
32 **DR. RABORN:** It was forty-five to 150, but all of those are out
33 there beyond -- I can't remember the average depth, but they're on
34 the edge of that depth range. Meters. Sorry.
35
36 **CHAIRMAN NANCE:** It looks like they're in the hundred-meter range.
37
38 **DR. RABORN:** Yes.
39
40 **CHAIRMAN NANCE:** Okay. Sean, please.
41
42 **DR. POWERS:** So two things. One, Roy brought up a point that I
43 agree with. I can't comment too much on the model-based approach,
44 because that is not my expertise, and did any of the reviewers of
45 the report have that expertise and familiarity? We know the Great
46 Red Snapper Count had a few statisticians on that peer review, and
47 a little bit of that is has this statistical approach gotten the
48 review that it needed, is one of the questions, and so, of the

1 reviewers, and I forget which reviewers that Louisiana chose, was
2 there anybody that was very familiar with these approaches?
3
4 **CHAIRMAN NANCE:** Scott, please.
5
6 **DR. RABORN:** I can't say exactly, Sean, but I do know that this is
7 something that we all need to be more conscious of, and we weren't
8 in our initial round, but, if you look at the papers I'm citing
9 that bring this issue to light, the earliest is 2018, and I think
10 Fisher was so dominant in promoting the model-based inference that
11 the difference between the two just sort of got lost for some of
12 us, but, nevertheless, I tried to lay it out as well as I could,
13 and we'll try to publish this, and we'll see what the reviewers
14 have to say.
15
16 **DR. POWERS:** Okay. That is fair, and it's just stratified random
17 and all of that, and, I mean, I can wrap my brains around this,
18 and the model inference is -- It made sense, but I don't know
19 enough about the nuts and bolts and how you extrapolate the
20 findings and whether that was correct.
21
22 The natural banks, and maybe this is more of a question for John
23 Walter or somebody like that, and I thought that area supported a
24 decent fishery, and those densities, or catch rates, that you all
25 suggest don't seem to agree with that, and do we know what the
26 landings in those areas are on the natural banks, because I
27 understand Texas natural banks are more productive, but I thought
28 the ones off Louisiana were quite productive too, and so do we
29 have any idea on that?
30
31 **CHAIRMAN NANCE:** I don't see any hands on that, Sean.
32
33 **DR. POWERS:** Okay. That might be something that we try to look
34 at, to reconcile, similar to the way we're looking at Florida and
35 other regions, to figure out if the numbers are making sense with
36 what the fishery has been telling us.
37
38 **CHAIRMAN NANCE:** John, please. I see your hand up.
39
40 **DR. JOHN WALTER:** Thanks, Sean. Good morning. It's probably not
41 the easiest for me to touch on it right now, without the figures,
42 but what I can do is pull in the figures from Chris's work, where
43 we put the commercial fishery into space, and see what the landings
44 are in those natural banks kind of far offshore, or people can
45 refer to that paper on their own, but I will return to that, and
46 so remind me when I talk about the commercial and recreational
47 catch rates in space. Thanks.
48

1   **DR. POWERS:** Mandy's study showed fairly high catch rates there,
2   and not as high, again, as off of Texas, but she had, if I remember,
3   in her heat map, she had some pretty good catch rates in those
4   areas.
5
6   **CHAIRMAN NANCE:** From my recollection also, the natural banks are
7   nearer shore in Texas, and so a little shallower depth range.
8   Thanks, Sean, for those questions. Luiz.
9
10 **DR. BARBIERI:** Thank you, Mr. Chairman. Scott, thank you for
11 walking us through all of this so carefully, because this model-
12 based approach -- I have to admit that I'm not that familiar with
13 it either, and, of course, I've heard about it, and this compared
14 to the design-based inference approach, but I am not that familiar
15 with how to use this in a context like this, where you're trying
16 to come up with an absolute abundance estimate, but I think that
17 your main points, to me, were clear, and I think you addressed a
18 lot of our concerns.
19
20 I mean, a study of this magnitude, that faces this many challenges,
21 will have some issues, right, but I think that -- I like the fact
22 that you were very upfront about what the challenges were and how
23 you guys tried to address it, and so, in many ways, I feel that
24 this estimate is a good one at this point, and Roy brought this
25 up, and I tend to agree, that the fact that this was focused on
26 sampling Louisiana habitats directly, and get those density
27 estimates and all the other information that you guys collected,
28 to me makes it a superior study, and not to hammer on the Great
29 Red Snapper Count, and they did what they could, given the
30 conditions that they were faced with, and the development of the
31 study, but, here, we have a focused study directed at Louisiana,
32 that did direct sampling there, and I think the methodologies that
33 you went through, to me, satisfied a lot of my questions, a lot of
34 my issues.
35
36 It won't address everything, but I think, if I were to kind of put
37 out there what my opinion is, it's that this is a more credible
38 estimate at this point, and so I will leave it at that, Mr.
39 Chairman.
40
41 **CHAIRMAN NANCE:** Luiz, thank you. Josh, please.
42
43 **DR. KILBORN:** Thank you. In thinking about this model-based
44 approach, and how it may or may not be subjected to the problems
45 of the randomization of the sampling, I am wondering about
46 information content, and, specifically, the fact that the
47 unconsolidated bottom type and the platforms are by far the most
48 sampled areas, and so they have the best information pertaining to

1   them, based on your observations.
2
3   Then, when you kind of go through everything, and when you showed
4   us that Table 6 with the predicted red snapper densities, based on
5   the habitat type, region, and depth zone and all that kind of
6   stuff, we can see that the platforms had the most information, but
7   the unconsolidated bottom was numerically driving the estimations,
8   and so I am still a little uneasy with that issue, because I do
9   kind of still feel like the information that's going into the model
10 is not necessarily fully representative of this system that you're
11 trying to capture.
12
13 I think one of the big problems that I had with the Great Red
14 Snapper Count was the unconsolidated bottom habitat type, because
15 I just feel like that is being overestimated, Gulf-wide in that
16 case, but I think, in both cases, the maps are not great, right,
17 and so there is a little bit of, I don't know, overestimation, I
18 think, that's going on in that particular strata, and so I think
19 that's affecting a lot of the results, and we're getting bigger
20 numbers than we expected, because we don't really understand the
21 unconsolidated bottom type as well as we think we do.
22
23 I guess I'm just saying that I'm a little concerned about those
24 things, and I do agree with what Luiz just said regarding how I
25 absolutely feel a lot better now about what was being presented
26 today, versus our first look at this study, and I do think this is
27 actually a lot better than I initially thought, but I am still a
28 little concerned about the over-effort, on the platforms in
29 particular, and I don't know if anybody has any follow-up comments
30 on that, but that was what I had to say. Thank you.
31
32 **CHAIRMAN NANCE:** Thank you. Scott, any --
33
34 **DR. RABORN:** The fact that the study was not balanced is one of
35 the things that you use a model-based inference for, is to control
36 for an unbalanced study, and we could have not used the BOEM
37 platforms, but we had that information, and we might as well use
38 it, and so I don't -- Yes, there is more -- There are more samples
39 on platforms, but there is also more platforms than there are
40 artificial reefs, or natural banks, and there are more samples
41 over uncharacterized bottom, but the same is true, and, even still,
42 we sampled such a small fraction of the uncharacterized bottom, or
43 the open bottom, as we sometimes call it, in both studies, and we
44 need to look at this as a first approximation, and we need
45 subsequent surveys in later years, and we can use what we learned
46 from both of these studies to help design these better.
47
48 **DR. KILBORN:** Can I follow-up on that, real quick?

1
2 **CHAIRMAN NANCE:** Yes, please, Josh. Thank you.
3
4 **DR. KILBORN:** I'm just curious, and do you think that, if the
5 unconsolidated bottom type were more heavily sampled, and I'm just
6 asking you to shoot from the hip here, do you think the numbers
7 would go up or down on that particular habitat?
8
9 **DR. RABORN:** I can shoot from the hip, but it would be in a random
10 direction.
11
12 **DR. KILBORN:** No worries. I just feel like, with such an
13 underestimated habitat type, and for something that was under
14 sampled, given of how much of it exists, and for how numerically
15 dominant it becomes in the final estimate, I think that's where
16 I'm having a big disconnect with not just this study, but both of
17 the studies that did this absolute abundance stuff.
18
19 **DR. RABORN:** Well, yes. Given that we came up with the same
20 estimate as what the Great Red Snapper estimated for Louisiana --
21 I man, that doesn't prove anything, but it sure is better than if
22 one was ten-times bigger than the other, you know?
23
24 **DR. KILBORN:** Sure.
25
26 **DR. RABORN:** If all of our estimates lined up with every habitat
27 type, we wouldn't even be talking about it right now, and we would
28 just accept it and move on, but, because the natural banks are so
29 different, we're having this discussion, but, anyway, the two
30 estimates were the same.
31
32 Let's say that -- That means that, if our estimates are not right,
33 89 percent of the population is over this unconsolidated bottom,
34 which is more or less unavailable to the recreational and
35 commercial fisheries, and it's sort of a built-in marine protected
36 area of a source population, and it would certainly help explain
37 why maybe we saw such a quick recovery, or relatively quick
38 recovery, of this fishery, if you had this source population out
39 there, and you restricted fishing, and, all of a sudden, they
40 bounce back.
41
42 **CHAIRMAN NANCE:** Thank you. Roy, please.
43
44 **DR. CRABTREE:** I mean, I agree that it's the estimate on the
45 uncharacterized bottom that really is the surprising part of it,
46 and it does sort of explain some things, like how could we have
47 fished the stock down so far and then had these big recruitments
48 occur.

1
2   Of course, I look at it and think, well, how could we have
3   essentially collapsed the stock off of Florida like we did if there
4   are so many fish out there that weren't subject to the fishery,
5   and so I have a hard time reconciling, in my mind, this idea of
6   having all these fish on the uncharacterized bottom with the
7   historical way the fishery has responded to fishing mortality over
8   the last hundred years or so. Going back to the natural banks,
9   and so is all of the estimates from the Stunz study -- Is that all
10 from Texas, and then it's imputed into the Louisiana and their
11 estimate?
12
13 **DR. RABORN:** No, and their estimate is all imputed from Texas, and
14 our estimate is strictly based on natural banks sampled in
15 Louisiana.
16
17 **DR. CRABTREE:** Right, and, in the Stunz estimate, are all the
18 estimates for all the habitat types based on Texas data, or did
19 they have a mix of some things?
20
21 **DR. RABORN:** I would rather than somebody from the Great Red
22 Snapper Count answer that one.
23
24 **DR. CRABTREE:** Okay.
25
26 **CHAIRMAN NANCE:** Sean or Will, do you have any -- I don't know if
27 Greg is on or not.
28
29 **DR. POWERS:** I know it's a mix. I don't know what exactly was
30 done, but I know there was some Louisiana data, and I want to say
31 for the platforms, that was used, but the banks, I believe, was
32 all imputed, but I think Greg might be in the audience.
33
34 **DR. GREG STUNZ:** Mr. Chairman, can you hear me?
35
36 **CHAIRMAN NANCE:** Yes, please. Thank you, Greg.
37
38 **DR. STUNZ:** Thank you for allowing me to join in, and the answer
39 is, yes, it was a mix. Steve Murawski sampled the uncharacterized
40 bottom there, as well as natural banks. Now, it wasn't as much as
41 we would have liked to have had, because of the situations there
42 with Dr. Cowan, and thus the imputation, but it wasn't completely
43 no sampling, and we did have real samples in Louisiana on natural
44 banks and uncharacterized bottom.
45
46 **CHAIRMAN NANCE:** Thank you, Greg. I appreciate that input. Roy,
47 anything else? Okay. David.
48

DR. GRIFFITH: Thank you, Mr. Chairman, and thanks, Scott, for your presentation. I was just wondering, and, first of all, I would like John -- If he could share that paper he was referring to with the SSC, I would appreciate that. Then I also agree with what Luiz said about this being kind of a more focused, granular study than the Great Red Snapper Count, kind of for Louisiana anyway, but I was -- My main thing is, a few years ago, when I was interviewing fishermen, they were saying that the red snapper population had really rebounded quite substantially, and they were -- Essentially, if they didn't have quota, they would have to fish through the population to get to other species.

I was just wondering if there has been any more recent information from commercial fishermen, from their just knowledge about the stocks and what they feel, and whether or not there's anybody who could share that with us. Thanks.

CHAIRMAN NANCE: Thank you, David. Mandy, please. Sorry. Trevor first. I'm sorry, Trevor, that I skipped you. Trevor.

MR. MONCRIEF: It's all good. Thank you, Mr. Chair. I think we're going back and forth here, and these are certainly good points being made that probably need to be taken into account, and I had a question on essentially trying to get this one moving forward, and just to give me an idea of really what we're talking about here, and is there any possibility of an integration between these approaches, or is it solidified one or the other, completely?

CHAIRMAN NANCE: From my perspective, Trevor, right now, there wouldn't be any mixing of the two, and we haven't had a chance to look at that. Right now, we have an estimate from the Great Red Snapper Count that gives us the Louisiana value, and we also have this estimate from LGL, which gives us a value for Louisiana.

As has been pointed out, it's -- I think the main difference is, from the amount of magnitude, is that uncharacterized bottom, and that really is -- Uncharacterized bottom is a hard one to be able to sample and things like that, and so, anyway, I think that's where most of this is coming from. Go ahead, Trevor.

MR. MONCRIEF: From the natural banks side of things as well, with the catch rates and everything else, and I was just trying to think of, as we progress with this, to make sure we have all the options on the table, but, if it is one or the other, and that's how everybody feels, then I will keep that in mind.

CHAIRMAN NANCE: Thank you. Right now, Trevor, we haven't had the opportunity to do a mixing of the two, which I certainly appreciate

1 that question, but we certainly have had the opportunity to look
2 at how each of these studies produce their estimates, and so I
3 think that's where we need to dwell right now. Roy, to that point?

5 **DR. CRABTREE:** Well, it's coming back to the studies.

7 **CHAIRMAN NANCE:** Okay.

9 **DR. CRABTREE:** Scott, when you did your estimates, some were at
10 the beginning of the season, before the season, after the season,
11 and I know, off of Alabama, with some of the stuff that Sean has
12 done, before season and after season, you see real differences,
13 because it's fished down, and did you take that into account, and
14 then, when you look at Stunz versus some of these differences,
15 could any of it be accounted for by differences in when the samples
16 were taken, relative to when the season is?

18 **DR. RABORN:** We did not take season into account, and we sampled
19 across the season. Of course, that's going to impact your platform
20 estimates the most, and then, subsequent to that, the artificial
21 reefs, and you may be on to something, and I don't -- But, no, we
22 haven't taken that into account. We just didn't have the degrees
23 of freedom, and we made it as complex as we could make it and get
24 the best model diagnostics that we could get.

26 **DR. CRABTREE:** Sean, I know you're on, and, correct me if I'm
27 wrong, but, I mean, that's a big issue off of at least Alabama and
28 the Panhandle, where you've looked at those things, right?

30 **DR. POWERS:** It can affect the artificial reef numbers really, and
31 you're right, and, I mean, our sampling before and after the
32 season, on artificial reefs, changes by 20 or 24 percent.

34 **CHAIRMAN NANCE:** Thank you. Mandy, please.

36 **DR. KARNAUSKAS:** Thank you, Mr. Chair. Sean brought up, earlier,
37 the 2017 paper that we did, and how some of these numbers compare
38 with that, and so I just ran some quick comparisons that I wanted
39 to throw out, just as sort of a comparison.

41 The catch rates for the offshore banks, Texas versus Louisiana,
42 they are a little bit lower for the offshore Louisiana than they
43 are in Texas, according to that paper. I also summed up the
44 percentage of relative abundance by habitat, for just Louisiana,
45 and I came up with 9 percent of the abundance on platforms, and
46 just under 5 percent for artificial reefs, and remember that those
47 numbers were borrowed from Alabama, and we didn't have sampling in
48 Louisiana, and so it wouldn't surprise me if those are kind of

1 overestimated.
2
3 Then the remaining 86 percent would be in other, and we did not
4 have natural banks versus UCB, and we categorized it based on the
5 rock versus mud habitats from the UsSEABED, and so I don't have a
6 direct comparison for the natural banks, but I think it's
7 noteworthy that the platform estimate of 9 percent -- We got almost
8 exactly the same number, based on the 2017 paper, and so, from my
9 perspective, these numbers appear to be in the ballpark of what we
10 got in that previous study.
11
12 **CHAIRMAN NANCE:** Thank you, Mandy. Harry.
13
14 **MR. BLANCHET:** To Trevor's point about looking at the two, I don't
15 know if anyone has actually sat down with the two datasets and
16 tried to do a comparison, but I think that the idea of using the
17 two, the Great Red Snapper Count plus this set of information,
18 probably has some merit, and it's not going to be as simple as it
19 sounds, because there are differences in technique between the two
20 programs, but it is worthy of exploration.
21
22 I don't know how much time and effort people have to be able to do
23 that, but I think that it would be both scientifically interesting
24 and perhaps important to management.
25
26 The point that Roy had made regarding the before and after-season
27 densities, in Louisiana, I think that that would more influence
28 what we would see in the southeastern, and maybe some of the
29 central, region than what we would see in the southwest part of
30 the state, just because so much of the red snapper effort is
31 focused essentially in that southeast part of the state, and it
32 does apply across the state, but it is much more diffuse and less
33 high in volume in the western part of the state. Thank you.
34
35 **CHAIRMAN NANCE:** Thank you, Harry. Benny, I am hearing that you
36 want to say something, and your hand is not raising, I guess, but
37 if you have some input, please go ahead. Benny, it sounds like
38 you -- I am going to go on to Will, but when you get --
39
40 **DR. GALLAWAY:** How about now?
41
42 **CHAIRMAN NANCE:** There you go. Go ahead, Benny.
43
44 **DR. GALLAWAY:** I was just wanting to reinforce what Harry had to
45 say. If you look at the points of access to go offshore, and the
46 distribution of platforms, overfishing, or fishing through the
47 season, is a factor in some areas, but not all. There's a lot of
48 platforms that are very difficult to reach, but you don't have to

1 go that far to get good snapper catches.
2
3 Two, I wanted to make sure that we recognized Sonnier Banks is
4 somewhat shallower than the shelf-edge banks, and it's between
5 forty-five and a hundred meters, and so we did have one shallower
6 site, which did have good catches, and so those two points -- I
7 just wanted to make sure that everyone was aware of those. Thanks.
8
9 **CHAIRMAN NANCE:** Thank you, Benny. Will Patterson, please.
10
11 **DR. PATTERSON:** Thanks, Jim. Thanks, Scott, for the presentation
12 and clarifying some of the questions that we had previously and
13 then the reanalysis, and there has obviously been some really solid
14 discussion here, talking about the various issues.
15
16 One thing about design-based versus model-based approaches is,
17 with the model-based, obviously, you can put a random effect to
18 control for samples that might have some relatedness, and there
19 are other types of biases, and maybe you have a confounding factor
20 that you can pull out and try to account for that variance in your
21 model, but, in both cases, the assumption is that your samples,
22 the data themselves, are unbiased, and the design-based, where you
23 take a random sample, you try to control for that by having that
24 random sample, and it's still not clear to me -- Although there
25 wasn't a design here that's been mentioned, it's still unclear to
26 me how the sample sites were actually selected.
27
28 In the revised report, or this addendum, it talks about that they
29 weren't selected purposefully, or I guess that means they weren't
30 selected to have high versus low red snapper, some perception of
31 how many snapper might be there, but I still don't have a sense of
32 how that selection was done.
33
34 In the RFP, the original call for proposals to fund this, there is
35 actually some language in it that specifies 106 sites, and it's
36 not clear to me whether LGL was provided these 106 sites and said
37 this is -- That you must sample these 106 sites, how the state
38 selected those 106 sites, and were those specific sites, or was
39 that just generally the thinking was that we could afford to sample
40 106 sites, or to pay somebody to sample 106, and so I don't know
41 where that 106 comes from, or came from, and is it -- Were those
42 specific sites, and how did the state actually estimate those 106,
43 and then how was that modified to get to the hundred-and-twenty-
44 some-odd sites that LGL actually sampled?
45
46 Then, lastly, this idea of selection and how that was done -- If
47 it wasn't done randomly, and it wasn't done purposefully, then I
48 don't understand how that was actually done.

37

1
2 **CHAIRMAN NANCE:** Scott, please.
3
4 **DR. RABORN:** Well, as I pointed out, and I thought I was clear,
5 but, for the uncharacterized bottom, they were selected
6 purposefully and opportunistically, based off of where we selected
7 the pipeline crossing sites, and so, in that sense, it wasn't
8 random. It turns out that the purpose aspect of it had to do with
9 substrate type, but, since that wasn't a good metric, we weren't
10 really sure, and it's kind of tantamount to randomly sampling, I
11 suppose.
12
13 How the initial sites were chosen opportunistically, I wasn't
14 involved in that, and I can't speak to it, but, nevertheless,
15 that's how it turned out, and I've gone through how you can still
16 get an unbiased estimate with a model-based inference. As long as
17 you specify the model correctly, and you condition it correctly,
18 all the most important variables. As far as why there is less
19 samples in the model, ultimately, it's like I said, and it's
20 because, in post-processing, we combined some of those sites
21 together, because they were too close together.
22
23 **CHAIRMAN NANCE:** Thanks, Scott. Will, any follow-up?
24
25 **DR. PATTERSON:** Well, can Benny answer the question then of where
26 the 106 came from? It's still confusing to me how these were
27 selected.
28
29 **CHAIRMAN NANCE:** Benny, any information on that, please?
30
31 **DR. GALLAWAY:** Let me point out that we had several meetings with
32 Louisiana, presenting the results of our BOEM studies and other
33 studies that we had done, as they were in the planning process for
34 this study, and so information used to select sites would
35 undoubtedly take that information into account. The 106 sites
36 were selected by the state, based on information they had,
37 including the information that we gave them in face-to-face
38 meetings describing our previous studies.
39
40 The difference between 106 and 130, I think, comes from the 106
41 were samples to be collected during the field study, during the
42 course of the study, whereas we added platforms from the BOEM
43 study, data from platforms, to round out the sample size, and so,
44 other than that I don't know how to answer you. Thanks.
45
46 **CHAIRMAN NANCE:** Thank you, Benny. No more hands up, and we're
47 going to take a -- John.
48

MR. MARESKA: I guess this question is directed at Benny, and it goes back to sample site selection, and so, on page 7 of the report, it indicates that there were 147 single-pipe caissons that were not sampled as part of this study, and are they part of the 821 petroleum platforms, or were they purposefully excluded?

DR. GALLAWAY: They were purposefully excluded, and those are single-pipe caissons, and we were looking at multiple-leg structures, and I believe that's correct. By correct, I believe I answered your question, and, if I didn't, please -- I will elaborate, if you need more information.

MR. MARESKA: Okay, and so then those 147 single-pipe caissons were not incorporated into your estimate then either?

DR. GALLAWAY: That is correct.

MR. MARESKA: Thank you.

DR. GALLAWAY: Then they weren't in the BOEM study either.

CHAIRMAN NANCE: Okay. I appreciate the discussion. We're going to go ahead and take a -- Sean, go ahead. Then we're going to take a --

DR. POWERS: I'm sorry, and I'm messing up the break, but it was just a follow-on to Will's because I thought I had it understood that the slides suggested that you sampled from the pool of all available platform sites, and that doesn't match the answer that you just gave Will, and that's to Scott, and so is the argument that they're representative, even though they're not random, or are you just arguing that they were unbiased, and there was no reason to think that there were high or low populations, and so now I'm a little confused, because what I got from your presentation was there was randomness.

DR. GALLAWAY: On the platforms, we did not include caissons in the platforms, as definition. Caissons are the single-pipe structures, most of which are old and in shallow water, and so we did not include them in the study, and that was a conscious decision that we made. We did not consider them to be platforms.

DR. POWERS: That's fine, and thanks for that clarification, but I was getting back to the broader question that Will had asked about how exactly were the platforms or the individual natural banks -- I assume there was a universe, and they were pulled from that universe, and so I guess are you arguing that they're just representative or that they were in some kind of random-ish

39

1 fashion, and that's more to Scott.
2
3 **DR. GALLAWAY:** Are we still discussing caissons, or are we
4 discussing the platforms that we did sample?
5
6 **DR. POWERS:** I am talking about the sampling plan in general and
7 how the platforms -- I understand you didn't do single caissons,
8 but how the platforms were chosen.
9
10 **CHAIRMAN NANCE:** Scott, to that point, please?
11
12 **DR. RABORN:** The platforms were absolutely chosen in a stratified
13 random manner, and samples are apportioned to each stratum based
14 on the universe of platforms that were there, not including
15 caissons, of course, but, again -- So, for platforms, this issue
16 of non-random sampling doesn't apply, and it applies to other
17 habitat types, as I discussed, and it applies to uncharacterized
18 bottom, which rendered the same densities as the Great Red Snapper
19 Count, and it applies to artificial reefs, but, there again, we're
20 starting to --
21
22 As I said, as long as we specified our model correctly, and we
23 condition them correctly, and it doesn't matter, and it doesn't
24 suffer from what would happen if we just went and took a raw
25 average of those values from non-random samples, which is a problem
26 for a design-based estimate. It's going to give you a biased
27 answer, but that's not what we did, and so this question has been
28 asked and answered over and over again.
29
30 **CHAIRMAN NANCE:** Thank you, Scott. Let's go ahead and take a
31 break, and we'll come back at --
32
33 **DR. KILBORN:** Mr. Chair, can I ask a question about the random
34 sampling again? I'm sorry.
35
36 **CHAIRMAN NANCE:** Go ahead, Josh.
37
38 **DR. KILBORN:** Can we look at the slide that shows the platform
39 sites that were selected versus the entire universe of platforms?
40 I am confused about what you mean by stratified in general,
41 because, if you look at the number of black dots in the upper-left
42 strata, versus the one directly below it, there appears to be more
43 in the upper strata, but there are the same number of red dots in
44 both that were selected, and so there doesn't appear to be a
45 proportional allocation based on the proportion of total samples,
46 or proportion of total platforms, available in each strata, and so
47 I don't understand what you mean by the stratified aspect of your
48 randomness.

1
2 I think the question that people are asking about what does random
3 mean is did you use a random number generator, or did you throw
4 darts at a board, or something like that, and so could you please
5 elaborate on that?
6
7 **DR. RABORN:** We used a ping-pong table. No, but seriously, yes,
8 we did use a random number generator, and the platforms within
9 each of those stratum were selected randomly, with a random number
10 generator. Because of rounding errors, sometimes you get -- You
11 should have had four platforms in a stratum, but you only had
12 three, because you can't sample 3.6 platforms. I don't see the
13 issue that you're talking about, based on that slide. Now, the
14 depth zones shifted a little between the BOEM study and the 2020
15 study, but, in both cases, the platforms were selected at random
16 and stratified by region and depth zone.
17
18 **DR. KILBORN:** But how was the number of sites to be chosen in each
19 region set?
20
21 **DR. RABORN:** That probably had to do with budgetary constraints.
22
23 **DR. KILBORN:** So that's why this is not a stratified random
24 sampling, in my opinion.
25
26 **DR. RABORN:** Okay. Well, then how do you -- I mean, so you're
27 saying that you should have based it on the variance?
28
29 **DR. KILBORN:** Well, I mean, I would say that you would look at the
30 total number of platforms available and take the proportion that
31 are available in each strata and then select, of the total number
32 of sites you plan to choose, an equal number of proportional -- An
33 equal proportion of values.
34
35 **DR. RABORN:** But that's what we did.
36
37 **DR. KILBORN:** Well, but it doesn't appear -- It doesn't seem to be
38 that way.
39
40 **DR. GALLAWAY:** Each black dot does not necessarily represent a
41 single platform. That can be a field of platforms, and maybe
42 you're familiar with the Buccaneer Gas and Oil Field, where there
43 were thirteen platforms, which would show up as probably two dots
44 on a map like this.
45
46 **DR. KILBORN:** Okay, and so that makes a difference. I wasn't aware
47 of that.
48

1 **DR. GALLAWAY:** I'm sorry that I didn't catch on sooner to what the
2 question was. Thanks.
3
4 **DR. KILBORN:** Okay. Thank you.
5
6 **CHAIRMAN NANCE:** Josh, thanks for that question. Let's go ahead
7 and take a break until five after eleven, and, when we come back,
8 we need to move forward on recommendations, as far as using this
9 study in the future. Thank you.
10
11 (Whereupon, a brief recess was taken.)
12
13 **CHAIRMAN NANCE:** Sorry, gang. We took a longer break than I
14 thought we would, and let's go ahead and gather back up here, and
15 then we'll start again.
16
17 I wanted to just say, from my perspective, for Scott and Benny,
18 the presentation you gave, the reanalysis, I really appreciate
19 that, and I think you have done an excellent job today presenting
20 that, and it was clear and concise, and, while there are still
21 questions that are coming up, I don't think there's any issue with
22 what was presented today and what was done.
23
24 **DR. RABORN:** Thank you, Mr. Chair.
25
26 **CHAIRMAN NANCE:** I am certainly not an expert in the model-based,
27 and so I'm a little bit unfamiliar with that, over my years, and
28 I'm more with the other, but, anyway, I think there is -- Certainly
29 we understand what was done.
30
31 **DR. GALLAWAY:** You can see why Scott did it as well, and not me.
32 I'm in the same boat as you. Thanks.
33
34 **CHAIRMAN NANCE:** Okay. Great. Thanks, Benny. Let's go ahead and
35 I think, from my perspective also, is what this does is gives us
36 an additional estimate of snapper that are found off of Louisiana,
37 and it's different, and it's not better than or not worse than
38 what the Great Red Snapper Count gives us, but it just gives us a
39 different amount of red snapper available in each of these areas
40 off of Louisiana.
41
42 I guess, in moving forward, what do we want to do with this data?
43 One thing we talked about last time is we do have an analysis by
44 the Southeast Fisheries Science Center that's going to be presented
45 to us on Wednesday and Thursday which incorporates the Great Red
46 Snapper Count and gives us OFL and ABC for different scenarios
47 with that, and do we want to include -- The Center, last time,
48 said that it would be willing to, and able to, put these numbers

1 from this study into that analysis and give us another scenario
2 that we can look at on Wednesday and Thursday.
3
4 I am looking for -- I don't want to make a Jim Nance decision here,
5 and I'm looking for direction in do we want to do that, and we
6 need a motion to do that, and we'll do that, but we just need
7 consensus, and I would like to hear from the SSC, please. Luiz.
8
9 **DR. BARBIERI:** Thank you, Mr. Chairman. I don't disagree with
10 that direction there that you gave us, and I think it would be
11 good to have those numbers available for us, and we already have
12 the numbers that use the other estimate for Louisiana, and that's
13 part of our briefing book already in there, and so adding this one
14 will give us the option to have that discussion more explicitly on
15 Thursday, and I think that would help us with the decision-making.
16
17 I, personally, do not think that we need a motion, and this is
18 something that I think that Dr. Crabtree brought this up during
19 his motion at the January meeting, asking the Center whether their
20 process, their software or their spreadsheet, whatever they are
21 using to produce those estimates, would be flexible enough to
22 incorporate this number after this review, and I believe that they
23 said, yes, that would be the case, and so, in my view, it's just
24 a matter of us confirming with the Center that they can plug this
25 number in and bring us an estimate as of Thursday.
26
27 **CHAIRMAN NANCE:** Thank you. Jim.
28
29 **DR. TOLAN:** Thank you, Mr. Chairman. I completely yield to Dr.
30 Barbieri. He just covered everything that I was going to say, and
31 I welcome these numbers being incorporated, if the Science Center
32 could do it that quickly, and I would love to see another option
33 for OFL and ABC, based on the second set of numbers, and, like you
34 were saying, it's not a better set, and it's not a worse set, but
35 it's just a more Louisiana-centric set of numbers, and I applaud
36 the folks at LGL for the presentation, but I would welcome that,
37 and I really think it can be handled by a consensus, and doesn't
38 really need a motion, but that's just my opinion. Thank you.
39
40 **CHAIRMAN NANCE:** Okay. Thank you. I guess you've heard what I
41 have to say, that we would ask the Center to incorporate these new
42 analyses in. Katie.
43
44 **DR. KATIE SIEGFRIED:** The thing that I wanted to say here is just
45 what we were anticipating, from the discussion and the sets of
46 runs that Matt would perform, it would be a step-wise version, and
47 what he has provided now is the current Great Red Snapper Count
48 and then the full post-stratification.

43

1
2 What we were waiting to hear is whether the SSC thought the LGL
3 numbers should be substituted for the Louisiana numbers in the
4 runs, and so, if you could follow me on this, and, if you just
5 want a separate, but parallel, set of runs, we're going to end up
6 with a very large number of runs for Matt to do, if there's not a
7 decision about whether LGL is supposed to replace the Louisiana
8 values from the Great Red Snapper Count.
9
10 It just adds an extra parallel set of everything that's going to
11 be running, if that decision isn't made, basically now, and it's
12 not a different methodology, and it's not -- Like there's not going
13 to be some new version of the model that we're going to run with
14 LGL numbers, but everybody can probably infer the scale that we'll
15 achieve. If the numbers go down, the ABC and OFL advice will go
16 down, and so it's not some sort of model-based approach that we
17 need to verify, and so it would be great if we could not overwork
18 Matt on Wednesday and Thursday.
19
20 **CHAIRMAN NANCE:** What I am suggesting is that we replace the Great
21 Red Snapper Count numbers in Louisiana with the LGL numbers from
22 Louisiana, and that would be a separate run that we would do, and
23 the OFL and ABC presented to us on Wednesday and Thursday with
24 those analyses, and so it would just be an extra run. Ryan.
25
26 **MR. RINDONE:** Thanks, Mr. Chair. I am just thinking about what
27 Katie just said. After lunch today, we're supposed to have a
28 discussion about the post-stratification analysis, and so I wonder
29 if the SSC was willing to make a decision about whether or not to
30 apply that post-stratification, if that could be a binary decision,
31 and, again, that would be up to you guys.
32
33 Then that would remove a set of runs that would be necessary, and
34 so, right now, you have post-stratified and not post-stratified,
35 and, if we add in the LGL component, we go from two sets to four
36 sets, because you have LGL post-stratified and LGL not post-
37 stratified, compared to GRSC post-stratified and not post-
38 stratified, and so, if you decide whether or not you want to use
39 this post-stratification analysis, then you can eliminate the non-
40 post-stratified set, if that's what you wanted to do. If you
41 decided that you didn't want to use the post-stratification, then
42 you have the other one, and so you get back down to Matt only
43 having to do two sets of work instead of what is now being looked
44 at as four sets of work, and does that make sense?
45
46 Katie, I don't know about timing on this, but is this a decision
47 that could be withheld, perhaps, until after -- Like as far as
48 like which runs to do, and is that a decision that could be withheld

1 until after we review that post-stratification analysis after
2 lunch.
3
4 **CHAIRMAN NANCE:** Go ahead, Katie.
5
6 **DR. SIEGFRIED:** Absolutely, Ryan, and I think that's actually
7 preferable, and it's even more complicated than the way that you
8 described, in that there are assumptions by state that need to be
9 discussed, and we've actually had some discussion with some state
10 folks about whether the assumptions in that post-stratification
11 are okay for each state, and so it could be something like Texas
12 and Florida post-stratification, but not the other states post-
13 stratification, and, granted, Louisiana would be pulled out if it
14 was LGL, but it becomes a lot more complicated, and so I'm trying
15 to eliminate that extra set of runs, Ryan, that you're talking
16 about, and it would probably make sense to maybe draw up a
17 spreadsheet of the potential runs after the post-stratification
18 discussion.
19
20 **MR. RINDONE:** Okay, and so I have budgeted it looks like about
21 two-hours-and-forty-five minutes for that post-stratification
22 discussion, and, Mr. Chair, we're supposed to have us a lunchbreak
23 at noon, and so I think I would -- Just for the sake of pace and
24 discussion and everything, I think it's probably not a good idea
25 to try to start that now and then bisect it with lunch and then
26 try to continue after lunch, and so it's your pleasure insofar as
27 what to do about that. I definitely don't want to get a picture
28 of Matt with Band-Aids on the tips of his fingers, and so the best
29 way to move forward with that is at your pleasure.
30
31 **CHAIRMAN NANCE:** I guess, before we move on though, I want to ask
32 the SSC if there is any issue, from any member of the SSC, with
33 utilizing the LGL data in an analysis that would be presented to
34 us on Wednesday and Thursday, just to give us a different scenario,
35 if you will?
36
37 Hearing none, we will utilize -- We will have the Center, and we'll
38 give the Center, after we do the post-stratification analysis, to
39 come up with the different scenarios that we would like to see,
40 but, as far as from the SSC then, we're going to use the data from
41 Louisiana, from the Great Red Snapper Count, and we'll utilize
42 that in one of the scenarios, and we will also use the LGL data to
43 replace the red snapper data from the Great Red Snapper Count, and
44 we'll use that Louisiana data in also some of the analyses.
45
46 We'll go ahead and end that discussion now, and, to take us to
47 lunch, Ryan, let's go ahead and, if we can, we can do -- Let's do
48 those terms of reference for SEDAR 64 and SEDAR 85. We will do

1 those now, and that will take us to lunch, 12:00, and then we'll
2 have Katie's presentation right after lunch. Katie, is that okay?
3
4 **DR. SIEGFRIED:** Yes, that works for me. Thank you.
5
6 **CHAIRMAN NANCE:** Thank you.
7
8   **REVIEW: TERMS OF REFERENCE FOR SEDAR 64: SOUTHEASTERN U.S.**
9   **YELLOWTAIL SNAPPER OPERATIONAL ASSESSMENT**
10
11 **MR. RINDONE:** All right, and so we have terms of reference for an
12 update run for SEDAR 64, which looked at southeastern U.S.
13 yellowtail snapper through 2017, and the stock assessment found
14 that the stock was healthy and not overfished or undergoing
15 overfishing, and it incorporated recreational catch and effort
16 from MRIP-FES.
17
18 At its December 2021 meeting, the South Atlantic Council had
19 discussed the age of the projections, acknowledging that the
20 proposed catch limits would likely not take effect until 2023, at
21 which point the projections were going to be six years old, and
22 neither this SSC nor the South Atlantic's SSC recommends using
23 projections beyond five years, due to the uncertainty at that point
24 and beyond.
25
26 Considerate of this, the South Atlantic Council requested that FWC
27 update the yellowtail assessment with data through 2020, and the
28 Gulf Council mirrored this motion at its January 2022 meeting, and
29 so we have these terms of reference for you guys to look at, and
30 Luiz and his crew will be cited to take this on, once we get these
31 approved, and, clerically, what will happen is the Gulf Council
32 will send a letter acknowledging the need, et cetera, and the South
33 Atlantic will send an extremely similar letter, to which the terms
34 of reference will be appended, since their approval process will
35 happen on Friday, and our meeting will end on Thursday.
36
37 Up on the screen now, you have the latest, greatest, most-recent
38 version of the terms of reference, and this would update the model
39 using data -- To include data from 2018 through 2022, and it would
40 also evaluate a couple of potential issues, and so the 2017
41 recreational data for MRIP, especially for the Gulf, are several
42 times higher than that for the surrounding years. The recreational
43 landings for 2017 are several times higher than for the surrounding
44 years, and so, to the degree to which it's possible, the analysts
45 will take a look at that and see if there's anything that sticks
46 out.
47
48 Gratefully, the Southeast Regional Office has already done a

1 preliminary analysis of the APAIS intercepts, which has been
2 provided, and so any assistance that needs to be done, like with
3 webinars or calls or anything, Luiz, just tell your team that,
4 whatever needs to be done, we'll work it out.
5
6 Also, the South Atlantic has added to evaluate the potential issues
7 with the 2020 MRIP recreational landings data, due to the COVID-
8 19 pandemic, and this is just to the extent to which any
9 peculiarities with that year's data can be interpreted.
10
11 After that, we'll scroll on down, and so we have our standard
12 evaluation of status determination criteria, and these are based
13 on the South Atlantic's SDC for yellowtail snapper, since the
14 majority of the stock occurs within their jurisdiction, and then,
15 insofar as the projections are concerned, they're being asked for
16 in pounds whole weight annually for five years, using the constant
17 fishing mortality and under constant catch scenarios for both three
18 and five years and at an equilibrium yield, once estimated. It
19 looks like you have a hand from Jason.
20
21 **CHAIRMAN NANCE:** Jason, please.
22
23 **MR. ADRIANCE:** Ryan, can you remind me of the timeline, and I guess
24 it would be of the data workshop, and I am just curious why it's
25 2020 landings instead of 2021, and I assume that's a timing issue?
26
27 **MR. RINDONE:** Yes, it's a timing issue, and there is not actually
28 going to be a data workshop for this, and this is going to be done
29 almost completely in-house by FWC, and, if there is somebody that
30 they need to reach out to, they will document whatever
31 communications occur in the stock assessment report, so it's all
32 part of the record, but this will be run similar to how update
33 assessments used to be done under SEDAR, where it's just done by
34 the analytical body, and so the goal is to have this processed in
35 as timely a fashion as possible.
36
37 That said, 2020 data, at this point, should be finalized, and so
38 use of 2021 data would imply the use of preliminary data that may
39 not be exactly the same, once they're finalized, and so that's why
40 we're just going through 2020, and go ahead, Luiz.
41
42 **DR. BARBIERI:** Thank you, Ryan, and, Jason, to that point, just to
43 add a little bit to what Ryan just brought up, there's also the
44 issue that we had to, remember, basically cancel the data workshop
45 for mutton snapper and basically disrupt the timeline for
46 completion of that assessment, because we had to redirect resources
47 that yellowtail addressed, and so we're trying to get this done as
48 soon as possible, to not cause a major delay on mutton snapper and

1 not have this have a trickle-down effect, an impact, on the timing
2 for hogfish as well, which is next in line. The idea is to expedite
3 and do this as soon as possible, before the 2021 data are
4 finalized.
5
6 **CHAIRMAN NANCE:** Doug Gregory, please.
7
8 **MR. GREGORY:** Thank you, Mr. Chair. I am not sure if I remember
9 this correctly, but, looking at the OY line, under Item Number 2,
10 I think the two councils have different P* analyses, and, if so,
11 shouldn't this specify that the South Atlantic Council P* analysis
12 be followed, or something like that, or -- I'm not sure where to
13 go with this, but I just remember some discussion at the last
14 review workshop.
15
16 **MR. RINDONE:** Doug, we can say based on the SAFMC P* analysis
17 there, just for specificity.
18
19 **MR. GREGORY:** Thank you.
20
21 **CHAIRMAN NANCE:** Thanks for bringing that up, Doug. Any other
22 comments or changes or questions? Okay, Ryan.
23
24 **MR. RINDONE:** All right. We'll add that small edit there and
25 polish this thing up and send it back to the South Atlantic Council
26 for their Executive Committee to approve prior to the end of their
27 meeting, which is also going on this week, and we will get those
28 letters out to the FWC and make sure to throw in there that Luiz
29 is singularly responsible for doing all of this.
30
31 **CHAIRMAN NANCE:** Okay. Thank you. Let's go ahead and do SEDAR
32 85, Gulf of Mexico Yellowedge Grouper Operational Assessment.
33
34 **REVIEW: TERMS OF REFERENCE FOR SEDAR 85: GULF OF MEXICO**
35 **YELLOWEDGE GROUPER OPERATIONAL ASSESSMENT**
36
37 **MR. RINDONE:** All right. The last time we assessed yellowedge
38 grouper, it was finished up in February of 2011, using data through
39 2009, and it found that the stock, at the time, was not overfished
40 or undergoing overfishing, and clearly this one has got some dust
41 on it, and so the council has been talking about trying to get
42 yellowedge grouper updated for quite some time, since back when
43 Mr. Gregory was the Executive Director and Dr. Crabtree was still
44 the Regional Administrator, and so this has been a long time
45 coming, and I think Roy just sprouted another gray hair over that.
46
47 This one is just overdue to be reassessed, and it's an important
48 commercial fishery, and it has an emerging recreational component,

1 as recreational vessels are developed with an increased capability
2 for fishing further offshore and with better bottom-sounding
3 technology and better fishing tactics, and so more of the stock is
4 becoming accessible to the recreational fishing as well, and so
5 it's time that we took another look at this.
6
7 **DR. CRABTREE:** When we got the assessment last time around, did we
8 actually derive a catch level from that assessment, because my
9 memory was that it was really uncertain, and I can't remember if
10 we actually got an ABC out of the assessment or not.
11
12 **MR. RINDONE:** So the yellowedge grouper is included in the
13 deepwater grouper stock complex, and so it's folded in as part of
14 that. I would have to go back and review precisely how that was
15 done, and, if you give me a second, I can pull up the SSC's review.
16
17 **DR. CRABTREE:** That's okay, and my memory is that it wasn't based
18 on the assessment, but I could be wrong.
19
20 **CHAIRMAN NANCE:** Carrie.
21
22 **EXECUTIVE DIRECTOR CARRIE SIMMONS:** Thank you, Mr. Chair, and I
23 just had a question about Number 3, and I guess Ryan is going to
24 get to that, and I jumped ahead while he was looking up something
25 else, but, on the red tide and the impacts of red tide for
26 yellowedge grouper, do we have information that yellowedge grouper
27 are in fact impacted, juveniles I assume, by red tide, because
28 those are -- Those guys are pretty deep, and I'm not even sure we
29 know where the juveniles are.
30
31 **MR. RINDONE:** With the consideration for red tide, it's to the
32 extent possible, and so there may not be any data to evaluate the
33 effect of red tide on yellowedge grouper. If we treat it similarly
34 as we did scamp, there really isn't a measurable effect on scamp
35 for red tide, and scamp were also a deeper-water grouper species,
36 and so it is entirely plausible that there is a negligible effect,
37 or an undetectable effect, here, in which case it would simply be
38 noted as such, that there was no scientific literature, or pending
39 survey data, that suggests an effect, and then that term of
40 reference would be able to be considered satisfied. Not being
41 able to find an answer is an answer within itself, and does that
42 clear that up?
43
44 **EXECUTIVE DIRECTOR SIMMONS:** Yes, and so it's not a heavy lift,
45 but it's just confirming that there isn't any impacts, to make
46 sure that that's not available in the literature or anything, and
47 so it's not a heavy lift for the Science Center, I guess is what
48 I'm asking.

1
2 **MR. RINDONE:** To our knowledge, this is well within the bounds of
3 what they can do, and I will let them speak to that.
4
5 **CHAIRMAN NANCE:** Katie, anything to add there, or John?
6
7 **DR. SIEGFRIED:** Sure. Thank you, Mr. Chair, and I think that Ryan
8 and Skyler -- Skyler would be the one on the hook for this
9 assessment, and you've talked about this, right, Ryan?
10
11 **MR. RINDONE:** Yes, and Skyler and I had generally the same
12 conversation that I just had with Dr. Simmons, that it's likely
13 there aren't any information, but, because it's a grouper species,
14 because it occurs in an area in which red tide is known to have
15 occurred in the past, and, of course, those two things, exclusive
16 of each other -- It doesn't automatically mean that there is an
17 effect. If there's no data to suggest an effect, then we can't
18 just assume one for the sake of it.
19
20 **DR. SIEGFRIED:** Right.
21
22 **MR. RINDONE:** It may just be that it's undetectable, or undefined.
23
24 **DR. SIEGFRIED:** I think the reasoning behind it is that Skyler is
25 very well versed in the literature and any information about red
26 tide, and so it wasn't a heavy lift, but we don't -- As Ryan said,
27 we don't anticipate anything major for this particular TOR, but we
28 just wanted to cover it, in case there was something we hadn't
29 seen before, and I just saw Dave raise his hand.
30
31 **CHAIRMAN NANCE:** Perfect, and I think it's good to have it in
32 there, just to make sure that individuals know that it's covered,
33 if available. John.
34
35 **MR. MARESKA:** I will defer to Dave Chagaris, if his comment was
36 related to the red tide, and then you can come back to me.
37
38 **CHAIRMAN NANCE:** Okay. Perfect. David, please.
39
40 **DR. CHAGARIS:** I mean, I think Ryan is correct. From our ecosystem
41 model, we don't see a lot of red tide effects, or really any on
42 the deepwater species, except for maybe in 2005, and so we could
43 definitely take a look at that, just like we did for gag, but I
44 will also mention that we don't have juvenile yellowedge grouper
45 in the ecosystem model, and so, if there is a particular life
46 stage, younger life stage, we aren't capturing that in the model,
47 but, as far as the adults go, they typically are distributed deeper
48 than where those severe red tides occur.

1
2 **CHAIRMAN NANCE:** Okay. Thank you, David. John.
3
4 **MR. MARESKA:** Thank you, Mr. Chairman. I had noticed, in the
5 yellowtail snapper, that they specified the version of SS, and I
6 was just wondering if this will be run in the original version or
7 using the updated version, and then my second question is do we
8 need to review the available bottom longline data for this species,
9 and so I think we looked at that information for red grouper, and
10 I looked at -- I went back and looked at yellowedge grouper, and
11 there is two indices, and there is a bottom longline east and a
12 west index, particularly as it relates to the year 2020.
13
14 **MR. RINDONE:** Katie, can you speak to the SS version?
15
16 **DR. SIEGFRIED:** The SS version will be updated to the newest
17 version, but, as is standard, when the old version was used, it
18 will show a step-wise model-building table, to show that there's
19 not an effect of switching to the newest version.
20
21 **CHAIRMAN NANCE:** Okay. Thank you. Did that address your question,
22 John?
23
24 **MR. MARESKA:** That answered one question, and I guess the second
25 question was specific to the bottom longline index, and so I'm not
26 sure how much data would be available for the year 2020, for the
27 index for yellowedge grouper, and so is that something that we
28 need to look at, or are zeroes just going to go into place there,
29 and can the model handle that, because the terminal year is going
30 to be 2021 for this.
31
32 **CHAIRMAN NANCE:** Katie, please.
33
34 **DR. SIEGFRIED:** We don't have that run available right at this
35 moment, but what we've done in the past, and I think this was most
36 recently for red grouper, is we looked at, and then also for red
37 snapper, a reduced area index, so that we could see if the signal
38 from 2020 was impacted, and, in general, it has been impacted, but
39 that would be something that we would investigate during the
40 process of getting the data together, and I don't have that ready
41 for you to take a look at the regular model for the bottom longline
42 at this time, but that is what we would do as the assessment
43 proceeded.
44
45 **CHAIRMAN NANCE:** I think that's similar to what we've done in the
46 past too, isn't it?
47
48 **DR. SIEGFRIED:** Yes, and we've taken the areas that were sampled

51

1 during 2020 and run the entire standardization back in time, to
2 look at the impact of that reduced area, and then presented that,
3 or considered that, as to whether 2020 was a reliable year. If
4 it's not a reliable year, there is a few options that we can take,
5 either to use the reduced area or eliminate 2020 or do some sort
6 of averaging approach, but that's certainly something that we would
7 consider.
8
9 **CHAIRMAN NANCE:** Okay. Thank you. Trevor.
10
11 **MR. MONCRIEF:** Thank you, Mr. Chair. I wanted to bring up what
12 Ryan had mentioned in the beginning of this agenda item, the
13 potential increase in the recreational targeting of this fishery
14 across time, especially since the last time this species was
15 assessed.
16
17 I know there's a line in there that's fairly general, and it says
18 to document changes in MRIP data pre and post calibration, and I'm
19 assuming those magnitude of changes are just directly related to
20 CHTS and FES, and I was wondering if we need to include in here
21 some specific line about the examination of maybe targeted species
22 that are associated with this fleet within the MRIP data and
23 everything else, just to try to get an idea of the magnitude of
24 the increase of recreational targeting, or recreational effort,
25 for this fishery, and at least it might be able to inform some
26 sort of sensitivity analysis at the end of the assessment, but
27 that's just something that kind of came to my mind, because I think
28 that's something that has changed with this fishery in the last
29 decade, for sure.
30
31 **CHAIRMAN NANCE:** Katie, please.
32
33 **DR. SIEGFRIED:** A really nice thing that the recreational folks at
34 the Center have been doing is providing a new formatted working
35 paper that shows all those details year-by-year, intercepts and
36 effort data and all of the things that we've been lacking in the
37 years before to make those comparisons, Trevor, and so I think
38 that that working paper that will be provided will be really
39 helpful to look at what you're considering. If I may, Mr. Chair,
40 can I address some of the other MRIP topics, while we're on that
41 subject?
42
43 **CHAIRMAN NANCE:** Yes.
44
45 **DR. SIEGFRIED:** Thank you, and so I wanted to make sure of the
46 intent of some of these, and I did discuss them with Ryan, but I
47 wanted the SSC to weigh-in too, and the MRIP data bullet there,
48 for Number 2, both pre and post-calibration, and we have both the

1 working paper, but also the step-wise model building approach, and
2 so this one right here, to document any changes, that's just in
3 the working paper, but, later on, and I think it's in Number 5, or
4 Number 4 --
5
6 **CHAIRMAN NANCE:** I think it's part of Number 4, Katie.
7
8 **DR. SIEGFRIED:** You're right. It's second dark bullet.
9
10 **CHAIRMAN NANCE:** Yes.
11
12 **DR. SIEGFRIED:** So that is where we would do that step-wise model
13 building, to include the new FES-adjusted MRIP, to compare to what
14 the previous model looked like, and so I wanted to make sure that
15 that was the intent of these, and then to bring in the fact that
16 we are under an MRIP transition plan for any state survey data,
17 and so those are the only things that are covered here, is just
18 looking at the data differences, when you use FES, and looking at
19 the model reaction to FES, and is that true?
20
21 **CHAIRMAN NANCE:** From my perspective, yes, that's true.
22
23 **DR. SIEGFRIED:** Okay. Great. I just wanted to clarify.
24
25 **CHAIRMAN NANCE:** Okay. Doug Gregory.
26
27 **MR. GREGORY:** Thank you, Mr. Chair. I have two questions, both of
28 which are for Ryan, because his memory is better than mine, given
29 the age difference we have. We were both at that 2011 review
30 workshop, but I don't -- I remember looking at different SPRs, a
31 range of SPRs, for MSY, and so my first question is, is there an
32 MSY proxy for this species? I do know this species -- I think
33 this species was the indicator species for the deepwater complex,
34 in which case whatever we decide for yellowedge grouper applies to
35 the whole deepwater complex, but is there an MSY proxy? Was one
36 decided back then?
37
38 **MR. RINDONE:** I am actually going to start with a question from
39 Dr. Crabtree, and then that's going to lead me into the answer for
40 your question. Dr. Crabtree, yes, we did have the SSC recommend
41 specific OFLs and ABCs for yellowedge grouper, which, as Doug said,
42 it is the indicator species for the deepwater grouper complex.
43
44 The OFL that has been on the books since 2016 is 788,000 pounds
45 gutted weight, which is the equilibrium yield at, Doug, F 30
46 percent SPR, and so we're using an MSY proxy of 30 percent spawning
47 potential ratio, and then, circling back to Dr. Crabtree for the
48 ABC that is currently on the books, it's 780,000 pounds gutted

1   weight, and so the difference between the OFL and the ABC is very
2   narrow, but we have not had overages either, so to speak, for this
3   stock, or for that complex rather, since this assessment has been
4   done either.
5
6   **MR. GREGORY:** Thank you, Ryan. Should we have that 30 percent SPR
7   in this document itself?
8
9   **MR. RINDONE:** Okay, Doug, and so we can add that in there. That's
10 not a problem.
11
12 **CHAIRMAN NANCE:** John.
13
14 **DR. JOHN FROESCHKE:** We hope to have Reef Fish Amendment 48, which
15 is that status determination criteria document, implemented soon,
16 and, as part of that, it's the yield at F SPR 30 percent, and so
17 I'm optimistic that that will come soon.
18
19 **CHAIRMAN NANCE:** Okay. Perfect. Thank you, Doug. Katie, I think
20 your hand is still raised, but let me know if you still --
21
22 **DR. SIEGFRIED:** I had one other thing to bring up that I forgot to
23 earlier.
24
25 **CHAIRMAN NANCE:** Okay.
26
27 **DR. SIEGFRIED:** There was some work, at the Center, looking at the
28 effects of Deepwater Horizon on this species, and is it something
29 that the SSC would be okay with adding another consider the effects
30 of Deepwater Horizon type of TOR, so that we can take a look at
31 that work?
32
33 **CHAIRMAN NANCE:** Yes, I think that would be appropriate. Thank
34 you. Harry.
35
36 **MR. RINDONE:** Sorry, Mr. Chair, but I wanted to jump in here.
37 Jess, scroll up to Number 2 or 3 or somewhere, and, Katie, do you
38 want to put that under Number 3?
39
40 **DR. SIEGFRIED:** Yes, and right after the red tide would be good,
41 and, of course, I don't want to turn this into a research track,
42 but it has been a long time since this was assessed, and we do
43 believe that there may have been negligible effects of Deepwater
44 Horizon on this species, and we can consider different ways to
45 incorporate it, the same way we have with red tide, or maybe some
46 other deleterious effects on the reproductive health, but it just
47 would be nice to have a consider TOR there.
48

1   **MR. RINDONE:** Okay, and so consider the effects of the Deepwater
2   Horizon oil spill from April 2010 on the yellowedge grouper stock,
3   and is there something more specific than that that you're
4   proposing, or is that generic enough?
5
6   **DR. SIEGFRIED:** I think that's generic enough so that we can
7   include what we have without being required to include something
8   we don't, and I think that's good.
9
10 **MR. RINDONE:** All right. We will add that in under TOR Number 3,
11 as a third bullet.
12
13 **DR. SIEGFRIED:** Thank you.
14
15 **CHAIRMAN NANCE:** Thanks, Katie. Harry.
16
17 **MR. BLANCHET:** Thanks, Mr. Chairman. Going back to some of the
18 questions regarding the use of FES, one of the issues that I've
19 seen discussed in other forums, relative recently, is the potential
20 for estimates that are rare-event species to be rather poorly
21 estimated in the general survey, and, at least in my neck of the
22 woods, yellowedge is a very rare-event species, and there are some
23 folks that are fishing for it, but they're a small fraction of the
24 offshore fleet, and, yes, it's growing, but, at some point in time,
25 it will be better characterized, but, currently -- At some point
26 in the past, even in places where this is now a relatively common
27 event, at some point in the past, it gets back to that rare-event
28 issue.
29
30 In terms of evaluating the FES, and I don't want this to get back
31 into a rehash of the MRIP calibration discussion, but is there a
32 method to limit the effect of some of these relatively seldom-seen
33 survey contacts being overly influential on the assessment? Is
34 that -- I don't know if I made sense there.
35
36 **CHAIRMAN NANCE:** Harry, I'm not following.
37
38 **MR. BLANCHET:** Okay. Let me try it again.
39
40 **CHAIRMAN NANCE:** Okay. Good.
41
42 **MR. BLANCHET:** In Mississippi, Trevor made some points discussing
43 red snapper, where there were several years that there were only
44 a few intercepts that observed red snapper on the dock, and yet
45 the MRIP estimate of landings for red snapper was on a par with
46 some other years where red snapper were observed much more
47 commonly.
48

1 Those -- When you're getting relatively few of a species, my
2 concern is that you may be having some issues with defining just
3 how much harvest there is with those few intercepts. I understand
4 that you're going to end up with a large CV around those
5 intercepts, but I don't know how well that gets captured and
6 incorporated through the current version of Stock Synthesis and
7 whether it minimizes those values or whether it -- Or whether the
8 whole dataset from MRIP has a single CV applied to it, and does
9 that make more sense?
10
11 **CHAIRMAN NANCE:** Yes. Perfect, and Ryan has a -- Go ahead, Ryan.
12 Harry, that was perfect.
13
14 **MR. RINDONE:** Thank you, Mr. Chair. I think I got this, and I've
15 talked with Trevor about this stuff a lot, and so, Katie, I think
16 what we're looking at here is similar to what we're exploring for
17 yellowtail snapper with FWC with 2017, because the Gulf data for
18 the recreational landings for that assessment -- The recreational
19 landings were six-times what they are for the mean of the years
20 surrounding that 2017 calendar year, and, in the past, with
21 yellowtail snapper, we've had instances where a very low number of
22 APAIS intercepts have had a dramatic effect on the expansion of
23 the recreational landings resulting from the application of APAIS
24 and FES.
25
26 I am thinking what Harry is asking is similar to that, so that, if
27 there are landings which may be approaching outlier status, if you
28 will, that there be some kind of an investigation on the number of
29 APAIS intercepts, the magnitude of the reported catch from those
30 intercepts, just some kind of look at those data to try to explain
31 why those values might be larger than the surrounding years might
32 suggest that they should be, just so that we can catch that kind
33 of stuff before it ends up being folded into catch advice, and
34 does that make sense?
35
36 **DR. SIEGFRIED:** Yes, and I'm sorry if I wasn't clear at the
37 beginning, and my response initially was exactly to that, is that
38 that working paper would provide all of the intercept frequencies,
39 so that we could take a look at years where there were very few
40 intercepts that were potentially expanded into numbers that people
41 questioned.
42
43 If we have that working paper, which has not always been available,
44 but now it's available for all species, if we have that, we can
45 look at those individual years and make some decisions about
46 whether to do any smoothing or whether there is any particularly
47 unreliable years, whether the number is too high or too low.
48

1 **MR. RINDONE:** Harry, we've done smoothing, to this degree, for
2 other species as well, and red grouper comes to mind, and gag too,
3 and gag comes to mind as well, and is this something that you would
4 like explicitly noted in the terms of reference, or the inclusion
5 of this working document that Katie has referenced -- Is that
6 enough there, or what's your pleasure?
7
8 **MR. BLANCHET:** I did not get all of the implications in Katie's
9 prior comment on the working document, and so, if that is part of
10 the process, and it's addressed, then I think, as best I can tell,
11 that that probably addresses what I'm after.
12
13 **MR. RINDONE:** This is one of those things that has to happen here
14 at the assessment level, because the data, as they're provided
15 from NOAA S&T, don't account for outliers in that way, and they
16 just go ahead and report those data out as they're received, and
17 so any sort of smoothing activity would have to be done post-
18 examination, as part of the stock assessment process, and so we're
19 grateful that that information will be available.
20
21 **DR. SIEGFRIED:** If I may, Mr. Chair, when you're finished.
22
23 **CHAIRMAN NANCE:** I was just going to say that, having used those
24 documents for some of the other assessments, I think it provided
25 a really good context for allowing the assessment scientists and
26 the data workshop participants to be able to see the data and see
27 where we had maybe just one or two individuals that were accounting
28 for all of that catch and being able to buffer that with smoothing
29 and so forth. Katie.
30
31 **DR. SIEGFRIED:** Thank you, and I just wanted to provide Harry sort
32 of a step-by-step of what I meant, if I'm not clear, and so that
33 document provides the number of intercepts and the catch rates by
34 year, and what we can do, as a group, when we're looking at those
35 data, if we see the really -- If we see outliers, either the huge
36 peaks, like what we saw for gag early on, that Lisa pointed out to
37 the group, or, if we see zeroes where it doesn't make sense that
38 there would be a zero, when there is catches in the year before
39 and after, and we can take a look at that document and see if that
40 large or small number is a result of very low sampling.
41
42 If it's the result of very low sampling, we can take a look at the
43 actual intercept and see what happened, and sometimes the intercept
44 is like one intercept that caught thirty fish, and then it's scaled
45 by the effort, and so we would then consider a smoothing, usually
46 some sort of geometric mean, of the years before and after, but it
47 is a step-by-step that we would need to do with all of the
48 information laid out at the assessment process, during the

57

1 assessment process. I hope that's clearer.
2
3 **MR. BLANCHET:** Yes, and my concern was that the whole string of
4 harvest estimates would have a single CV applied to them and that
5 this wouldn't be captured, but it seems like this has a process to
6 do it, and so I'm good with that.
7
8 **CHAIRMAN NANCE:** Thank you, Harry. Trevor.
9
10 **MR. MONCRIEF:** I know -- I'm going to make a comment, but I'm going
11 to build off of Harry's point for just a second, and, Katie, I
12 appreciate you laying out the details of that working paper, and
13 I think it's something that will be certainly beneficial in the
14 future.
15
16 You said you're going to look at annual estimates by year and then
17 the number of associated surveys. Now, is that like just a cursory
18 look at first, and then, if there is problems, you're going to dig
19 into the wave-specific information, and is that kind of your
20 thought process?
21
22 **DR. SIEGFRIED:** Yes, and that's usually -- It's not even just wave-
23 specific, but it would be intercept-specific. If we noticed that
24 there were few intercepts in a wave estimate, then we would
25 actually delve into the intercepts themselves.
26
27 **MR. MONCRIEF:** All right, and then, just to give my colleagues on
28 the SSC just an idea of what's going on here, if you look at the
29 yellowedge time series for recreational landings for 2014 through
30 2020, by wave, by state, there is one instance in which Mississippi
31 has landings, and that one instance is the highest harvest estimate
32 across all the waves, across all the states, and it's 44,000
33 pounds.
34
35 While the PSE is 75 percent, it is one of the lowest PSEs in the
36 entire time series, and so that has been an ongoing discussion for
37 the last month-and-a-half, and it's been something we've been
38 working on, and we're affected by for a lot of species, but just
39 to kind of give you all a little bit of that background, as to
40 what Harry was mentioning.
41
42 The other thing that I was going to ask, Katie, is, when you're
43 doing this look, to see if there's a magnitude change in effort or
44 anything else, I am trying to think of this fishery, and this
45 fishery is somewhat nuanced, in the fact that the individuals that
46 are going out there -- Yes, yellowedge grouper is probably one of
47 the main targeted species of the fishery, but there is also a lot
48 of others.

1
2 When they're going out there, they're not going out there for one
3 species, and they're going out there for the entire bag that they
4 can get, and that's multiple species, and so I'm just wondering if
5 we kind of characterize this, or think about it, if this is going
6 to affect other species as well, or other deepwater species.
7
8 If you look at it, it's almost like a group across-the-board, and
9 not just deepwater grouper, but also tilefish and everything else,
10 and kind of look at how that effort shifted over time. I think it
11 will be somewhat beneficial to kind of get an idea of how this
12 fishery has grown. Now, whether it has an effect on the assessment
13 or not, I don't think it will, but it will at least be something
14 we can look at and have in our heads, as far as how quickly is
15 this growing, and what are the potential impacts in the future,
16 and so that was my comment, but thanks for bringing that up, Harry,
17 and I'm glad that we had this discussion.
18
19 **CHAIRMAN NANCE:** Yes, it's a good discussion to have, because it
20 does have a -- It can have a great effect on the assessment, for
21 sure, and it's good to look at it. Katie, I appreciate you being
22 able to provide this for each of them now, because it's something
23 that, during the data workshop, is a good discussion point, to see
24 where those different spikes are coming from. Any other comments
25 on this Item Number IX? Luiz, please.
26
27 **DR. BARBIERI:** It's very minor, and it's almost a clerical thing.
28 Under Item 4, for OY there, I think you mean to say the yield at
29 75 percent of FMSY, because we're actually talking about the
30 optimum yield and not FOY, right?
31
32 **MR. RINDONE:** Yes, I think that's correct.
33
34 **CHAIRMAN NANCE:** Okay. We'll go ahead and break for lunch and
35 come back at -- We'll make it 1:15 Eastern Standard Time, and Dr.
36 Siegfried will be our first presentation after lunch, and it's
37 Item Number VI, Discussion of Results of Post-Stratification
38 Analysis. Thank you.
39
40 (Whereupon, the meeting recessed for lunch on March 8, 2022.)
41
42   - - -
43
44   March 8, 2022
45
46   TUESDAY AFTERNOON SESSION
47
48   - - -

1
2 The Meeting of the Gulf of Mexico Fishery Management Council
3 Standing and Special Reef Fish, Special Socioeconomic & Special
4 Ecosystem Scientific and Statistical Committees reconvened on
5 Tuesday afternoon, March 8, 2022, and was called to order by
6 Chairman Jim Nance.
7
8 **CHAIRMAN NANCE:** We're going to go ahead and start. I hope that
9 everybody had a good lunch, and now we're going to go to Item
10 Number VI, Discussion of Results of Post-Stratification Analysis.
11 Just a second. Ryan.
12
13 **MR. RINDONE:** We have one more specification for the yellowedge
14 grouper optimum yield. Per Amendment 48, which hasn't yet been
15 implemented, but it's been signed, sealed, and delivered to NMFS,
16 and so we're just waiting on implementation there, and Amendment
17 48 is going to specify optimum yield for yellowedge grouper as 90
18 percent of MSY, or MSY proxy, which I will list as 30 percent SPR,
19 and I will just put a notation in there that that's as per Reef
20 Fish Amendment 48, and so, other than that, that ties off
21 yellowedge.
22
23 **CHAIRMAN NANCE:** Thank you, Ryan, and thanks, John, also, for
24 finding that. We'll go ahead and turn the time over to Dr.
25 Siegfried to lead us in this discussion.
26
27 **DISCUSSION OF RESULTS OF POST-STRATIFICATION ANALYSIS BY SEFSC,**
28   **FWC, AND GRSC TEAMS FOR FLORIDA ABSOLUTE ABUNDANCE DATA**
29
30 **DR. SIEGFRIED:** Thank you, Mr. Chair.
31
32 **MR. RINDONE:** I will do the scope of work.
33
34 **CHAIRMAN NANCE:** Good idea. We'll do the scope of work first, and
35 then we'll turn the time over to Katie.
36
37 **MR. RINDONE:** This is the discussion of the results of the post-
38 stratification analysis by the Science Center and FWC and the Great
39 Red Snapper Count team, and so Dr. Siegfried is going to enthrall
40 you in the work of this group to conduct this post-stratification
41 analysis on the estimates of red snapper absolute abundance for
42 areas of the West Florida Shelf and other areas in the Gulf of
43 Mexico.
44
45 Spatial distribution of fish currently presents a conflict with
46 data that's been collected historically from other Gulf-wide
47 fishery-independent surveys, and so, specifically, this work
48 looked to divide the current ten-to-forty-meter depth stratum into

1 ten-to-twenty-five-meter and twenty-five-to-forty-meter strata,
2 and you guys will evaluate the information presented and ask
3 questions and make any recommendations, as appropriate.
4
5 Here, like we were talking about before lunch, if you decide to
6 move forward with using post-stratification for considering catch
7 advice, then that's a decision that could be used to weed down the
8 number of analyses that Matt and LaTreese have to drum up. If you
9 decide not to use it, the same thing, but a decision here certainly
10 does affect the amount of work that needs to be completed prior to
11 the end of the meeting. Mr. Chair.
12
13 **CHAIRMAN NANCE:** Thank you. Katie, we'll go ahead and turn the
14 time over to you now.
15
16 **DR. SIEGFRIED:** Okay. Thank you, Mr. Chair. What I have for you
17 is the post-stratification results, and this was of the Great Red
18 Snapper Count estimates by depth and state. Just to provide an
19 overview, and Ryan mentioned a little bit about this, this is
20 analysis conducted after the CIE review, and these efforts have
21 been undertaken in order to address the uncertainties in population
22 estimates that we provided by the study.
23
24 In this case specifically, there were noted too many fish in the
25 shallow-water stratum estimate of off Florida, and that's what
26 started this effort, and that was noted by our state partners in
27 Florida and our NMFS scientists that run the surveys. Then, when
28 we presented to the SSC last time, we did receive a motion to
29 expand that effort.
30
31 I am not the one who did the analysis, and it was Rob Ahrens, who
32 was a member of the Great Red Snapper Count team, who is now an
33 MSE scientist for NMFS, and I am the organizer of the group to get
34 everybody talking about this, and so I get to present it to you.
35
36 As I said, this started with Florida, and what we did to start was
37 to compare the state and NMFS survey data to the estimates provided
38 by the Great Red Snapper Count in the shallowest depth stratum,
39 and I went over that in great detail last time, and so we don't
40 need to show those again, although the material is on the SSC's
41 archive.
42
43 At the last meeting, the SSC asked that the efforts be expanded to
44 the other states, and that was where possible, and so the language
45 is specifically there for you of that ten to twenty-five meters
46 and twenty-five to forty meters was to be the new split, rather
47 than the ten-to-forty-meter depth strata, and that we would need
48 to consider this, whether it's possible, for all regions of

1   Florida, Alabama and Mississippi as a unit, Louisiana, and Texas.
2
3   As a note, each state result that I am presenting is independent
4   and can be included separately, and so, if there is issues with
5   the caveats, we can discuss each individual state estimate
6   separately.
7
8   I just wanted to mention the technical details were reviewed very
9   thoroughly by the CIEs and this SSC, and this SSC did look at
10 those, but it was also reviewed by the previous SSC, before the
11 membership change, and that document I have listed here at the
12 bottom linked for you, and that was the Great Red Snapper Count
13 population estimation that Rob Ahrens initially presented.
14
15 Any technical details of the original analysis can be found there,
16 and the only adjustment here is that the ten to forty-meter depth
17 zone was split into two. Otherwise, the general details of the
18 analysis are the same, with some caveats that I will go over.
19
20 That "where possible", or "as possible", is what we're trying to
21 address here with our assumptions. For Texas, we had to make some
22 assumptions about the total UCB split into those two strata of ten
23 to twenty-five and twenty-five to forty.   That split was
24 approximated based on the overall proportion of UCB in the ten to
25 twenty-five and twenty-five to forty-meter depth zones across the
26 states.   Rob did note that this could be more accurate if we ran
27 -- If we used the GIS modeling that was done for the Great Red
28 Snapper Count, instead of using this approximation, but that was
29 not a quick turnaround time, and so that is the assumption for
30 Texas, is that proportion of UCB is considered across the state.
31
32 For Louisiana, we did have to assume the density in the UCB in the
33 ten to twenty-meter depth zone was zero, because we didn't have
34 any samples, and we just couldn't make something out of nothing,
35 and so what happened is most of those fish were actually placed in
36 the twenty-five to forty-meter depth stratum.
37
38 In Mississippi and Alabama, and, again, this is for just UCB, and
39 there isn't saying there's no fish in ten to twenty-five meters of
40 water in Louisiana, but it's just, if there is UCB in that depth
41 zone, we had to assume the density was zero, or the abundance was
42 zero.   For Mississippi and Alabama, we subtracted the total area
43 in the ten to twenty-five meter depth zone, because we had to
44 assume the density was zero, again for the same reasons as
45 Louisiana. The density that was estimated before is from the C-
46 BASS deeper-water estimates, and the original details, again, can
47 be found in what Rob presented to the SSC previously.
48

1   For Florida, there was some imputation from the closest strata
2   required, but, in general, that's where we started, and that was
3   where we had -- Texas is where we had some sampling in that zone,
4   and it made it more possible to provide these estimates than
5   potentially in the other states.
6
7   I want to apologize that this is small, and it's always difficult
8   to figure out how to present everything that I think you should
9   see on one slide, but I wanted to show is, on the left, this is
10 what Greg Stunz and team presented at the last SSC meeting as the
11 adjustment, which ended up around 96.7 million across the Gulf,
12 and that's on the left, and then on the right is the new estimate,
13 with the post-stratified values in each of the habitat types, and
14 this is provided in more detail in the document, in that we split
15 up the random forest probabilities, as well as the habitats, by
16 state and depth zone, and we provide the CVs there in the document
17 in more detail.
18
19 Overall, for the post-stratified estimate, if all four regions are
20 accepted, it's an 88.3 million estimate for the Gulf of Mexico, in
21 total, and you will note that none of the estimates changed for
22 the natural or artificial habitat, and this is just a post-
23 stratification of our uncharacterized bottom category. I feel the
24 need to let you look at this for a while, and I don't see people's
25 faces, but --
26
27 **MR. RINDONE:** There is lots of studying.
28
29 **DR. SIEGFRIED:** Perhaps somebody could let me know when it's best
30 to go to the next slide, because this is kind of the meat-and-
31 potatoes of the presentation.
32
33 **CHAIRMAN NANCE:** We'll take a look at it just for a minute, and
34 hopefully everybody has seen this graph before, and it's not like
35 we're seeing it for the first time here, and we've had an
36 opportunity, and Katie provided this, and so hopefully we've had
37 an opportunity to look at it, but go ahead, Katie.
38
39 **DR. SIEGFRIED:** Okay. The conclusions of this is it is possible
40 to do the post-stratification for those shallow-water depths --
41 For that shallow-water depth zone, by splitting it into two, but
42 the main result, particularly for Florida, is that the fish were
43 moved from the ten to twenty-five stratum to deeper depths, and it
44 wasn't a big drop in total estimate for Florida. It was more of
45 a drop for some of the other states, and you can get the proportions
46 in that table.
47
48 The larger relative abundance in the Big Bend region, you will

1 note it remains an issue, and we were not able to correct for that
2 in what we did for this post-stratification, and we agreed, as a
3 group, that there was not a way to address that with this analysis,
4 and we would have had to do more sampling, do some redesigning,
5 and that was not the goal of this group.
6
7 This group simply wanted to use the snapper count data and just
8 sort of understand and sort of get a ratcheting down of uncertainty
9 of where those fish should be, based on all of this historical
10 information we have from the state surveys and from the federal
11 surveys. I have -- I am opening up the document here, because I
12 wanted to read you some numbers.
13
14 What it resulted in -- My computer is giving me issues, but I think
15 it's around 78 percent of the Florida estimate is still in the Big
16 Bend, but we do think this is a better estimate, because we don't
17 see a very large amount of fish in a very shallow depth zone, and
18 it just doesn't jibe with what we've seen in the past, but the Big
19 Bend abundance is still relatively high.
20
21 The analysis for the other states were not part of our group
22 discussion, but we presented them here for the SSC's review, as it
23 was a request by the SSC during our last group meeting, and most
24 of the Florida folks actually jumped off the phone, because we had
25 finished the Florida part of it, and so, really, it was a
26 discussion with Rob Ahrens and some internal folks, and Will
27 Patterson stayed on the call, to listen to our plan of how we would
28 look at the other states, but we, unfortunately, didn't have the
29 other folks from the other states available for those calls,
30 because it started with Florida, and so that's how the meeting
31 went, and the conclusions for post-stratification, and I think
32 that's the last slide. Yes.
33
34 **CHAIRMAN NANCE:** Okay. Perfect. Any discussion from the SSC on
35 the material about post-stratification? Trevor, please.
36
37 **MR. MONCRIEF:** I had talked with other state folks about this a
38 little bit, and I was wondering about the assumption of zero fish
39 in the ten to twenty-five-meter stratum for Mississippi/Alabama
40 and Louisiana, and could you kind of -- Could you go a little bit
41 further into that one, a little bit?
42
43 **DR. SIEGFRIED:** Sure, and I don't have too much more that I can
44 tell you about it, besides there just were no UCB samples from
45 those depths for Louisiana or Mississippi/Alabama. The assumption
46 we made is that that shallowest stratum has a density of zero,
47 because we don't have any other observations to go off of, and, in
48 the original analysis, those densities, or the estimates, were

really from catch rates, or sampling from deeper depths, and so it was an imputation before, and, if we're separating out those strata now -- We weren't assuming any imputation, and we were assigning them to the depth strata that seemed most appropriate, which is the twenty-five to forty, and so it's a drop, in some places, in the total estimate, but it's not an assumption of zero fish. It's just zero fish on UCB in that ten to twenty-five.

MR. MONCRIEF: I think, and this is just my thought process right now, to me, it seems -- I don't think this is a good assumption, and I can see why it was imputed and why it was part of the analysis, because you didn't have the information, but I think, in my mind, it would have been more appropriate to keep Mississippi and Alabama -- In my opinion, to keep them the way they are, since that information exists to use what you have available to you, rather than assuming zero across-the-board on the UCB for that area, but that's just me, and I will let Harry and Jason get to it.

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

MR. BLANCHET: Let Jason go first.

MR. ADRIANCE: Thank you. Thanks, Harry. I too have an issue with the assumption of zero for Louisiana. Obviously, in the LGL study, we had fish in that depth zone, and we know, from our anglers, that we have fish in that depth zone, and I understand this was because you had no observations for the Great Red Snapper Count, but, I mean, we've discussed some of the issues with the sampling in Louisiana, and I don't recall how much that translated into what may have been seen in the ten to twenty-five meter, and I understand why it was done for Florida, and I think it's appropriate there, but I just don't feel it's a logical leap for Louisiana. Thanks.

CHAIRMAN NANCE: Thank you. To that point, Scott?

DR. RABORN: I just did a crude summary, based on our Table 6 in our report, and it's a little better than 1.5 million red snapper that we estimated to be in the ten to twenty-five-meter depth zone for uncharacterized bottom in Louisiana.

CHAIRMAN NANCE: Thank you. Harry, please.

MR. BLANCHET: I think Scott just stole my thunder.

CHAIRMAN NANCE: Oh, sorry.

MR. BLANCHET: It's okay, but I had a different question. In the presentation, several times, you said that the fish were put into a different depth zone, and does that mean that -- Say you have -- Let's take Louisiana, and you've got the ten to twenty-five, and then you've got the twenty-five to forty, and, essentially, you used the same density in twenty-five to forty as what you used as a density previously for the ten to forty, or am I missing something? Basically, it's just a ratio of area?

DR. SIEGFRIED: My apologies for not being clearer with my language, and I shouldn't say placed in the other, but what I meant by that is we're calculating the estimates, or Rob calculated the estimates, and, when he used those two depth stratum, what happened with the estimates is that, from twenty-five to forty meters, there were fish estimated in that depth stratum after the post-stratification, rather than it being across ten to forty, and so we were looking at a homogenization of the fish from ten to forty, and now that it did is say, no, there's still quite a few fish, but they're in the twenty-five to forty, because that's where the sampling occurred.

MR. BLANCHET: Okay, and so there was an increase in the densities in the twenty-five to forty and a decrease in the densities from below twenty-five?

DR. SIEGFRIED: Well, we didn't have it stratified that way before, and we had just ten to forty, and so what happened is those fish were placed in the deeper depths by the new stratification estimates, stratified estimates, rather than across the whole -- So I can't say they increased, and, again, maybe I misspoke, and I can't say they increased from twenty-five to forty, because that stratum was not there before, but what the total estimate did, from ten to forty, is it put most of those fish in that twenty-five to forty, rather than spreading them out across that whole ten to forty.

MR. BLANCHET: Okay. I was just struggling a little bit there, and I think that clears up. Thank you.

CHAIRMAN NANCE: Katie, thanks for that clarification. Benny, please.

DR. GALLAWAY: My points have been covered.

CHAIRMAN NANCE: Okay. Thank you. Sean.

DR. POWERS: I kind of side with Trevor on this, and I have one question though, Katie. I thought, at the last meeting, we were

1 talking about ten to twenty meters, and I didn't realize that it
2 was twenty-five, and so I guess that's one of my things, is, you
3 know, where do we put the boundary of that zone, where we have
4 relatively little information from the Great Red Snapper Count,
5 but the Alabama surveys in areas less than that, where we bottom
6 longline, and vertical longline, away from structure, and so no
7 structure, and we have -- We catch red snapper in that depth zone.
8
9 It's not, obviously, the highest catch rates we get, and those
10 occur a little deeper, but we catch fish in there, and so the
11 assumption that it's zero -- I think I feel more comfortable with
12 the assumption that it's at least that density that we were finding
13 in the other areas, and so just more my thoughts, I guess, than a
14 specific question, other than why ten to twenty-five meters, and
15 why not ten to twenty meters?
16
17 **DR. SIEGFRIED:** Sure, Sean, and so we had, in our original group
18 meeting, a ten to twenty-meter stratum. When the SSC gave us the
19 request, in that language, and maybe one of the staff can double-
20 check, but I'm pretty sure it says ten to twenty-five-meter and
21 twenty-five to forty-meter.
22
23 **DR. POWERS:** Okay.
24
25 **DR. SIEGFRIED:** That's why we did ten to twenty-five for this
26 request, across-the-board, and I have it ten to twenty for just
27 Florida, and we can compare it to ten to twenty-five, and it's
28 very, very, very similar, and that was something that Rob said,
29 was he didn't see much difference in the sample availability
30 between the ten to twenty split versus the ten to twenty-five
31 split, but I do have a question for you, Sean, if I can, Mr. Chair?
32
33 **CHAIRMAN NANCE:** Yes, please.
34
35 **DR. SIEGFRIED:** Okay, and so one of the things that Rob noted,
36 when we were going over this, is he said there were no samples
37 from the ten to twenty-five-meter depths on UCB and not on other
38 habitats, and so, again, I wanted to reiterate this is not saying
39 there is no fish, but it's just not any fish on UCB, which it
40 seemed like it was very rare to sample UCB in the ten to twenty-
41 five-meter stratum across the Great Red Snapper Count sampling,
42 and, I mean, it's a huge amount of work to sample all of the depth
43 zones that were sampled, but UCB seemed to be especially difficult
44 to sample.
45
46 My question is, Sean, for Mississippi/Alabama, is that true? Like
47 did we get zero samples? Like there were no samples on UCB in ten
48 to twenty-five? That's what I understand from the data that I've

1 seen and the analysis I have, or were there samples on UCB in the
2 ten to twenty-five-meter zone that didn't get fish?
3
4 **DR. POWERS:** No, and so we would have reported all the zeroes in
5 our calculations, and so, if a sample was zero catch, or zero
6 observations on the ROV, that would have been included in our
7 estimate, and so -- I agree that I don't think we had -- For the
8 Great Red Snapper Count, I don't think we had any samples in less
9 than that, just because our artificial reef zones start at about
10 sixty, or sixty-three, feet, and so we wouldn't have sampled that
11 area on the uncharacterized bottom for the Great Red Snapper Count.
12
13 The samples that I refer to are the annual surveys we do for the
14 state, and we have sampled that uncharacterized bottom, with at
15 least hook-and-line gear, and have caught red snapper in that,
16 and, like I said, it's a lower catch rate, for sure, than the
17 sixty-five-foot and deeper strata, but those were the samples that
18 I was talking about, but my recollection is the same as Rob, that
19 we simply did not sampled the uncharacterized bottom in those
20 shallow depths.
21
22 **DR. SIEGFRIED:** Okay. Well, thank you for clarifying, because
23 that's what we working -- That's the assumption that we were
24 working on. Like I said at the beginning of this, there's not
25 much more we can do, and we don't want to create more sampling,
26 and we're not questioning the design of the snapper count, and
27 there's not any different way that we can use the data available
28 to get at this question for Mississippi/Alabama and Louisiana.
29
30 The group consensus, and anybody who is on the group can correct
31 me if I'm wrong, but the group consensus was about Florida, and
32 they -- Everybody on that call, including Florida state folks,
33 were pleased with the results of that, but they were not part of
34 the assumption making for the other areas, but, I mean, I have no
35 idea how we would create -- Without imputing, which is what Rob
36 and all of the Great Red Snapper Count folks had to do, in order
37 to get an estimate that was robust for the ten to forty, right,
38 but so that's what we have here, is the data just don't support an
39 estimate in that shallow stratum for the uncharacterized bottom of
40 really any better than we have here for you.
41
42 **CHAIRMAN NANCE:** Thank you, because, right now, it looks like we've
43 got an estimate for ten to forty, with all the strata put into
44 using the abundance of what was collected in that whole area. When
45 you try to partition it out, if you don't have any samples in that
46 shallow area, you don't have any ability, really, to estimate
47 abundance, and so -- Okay. We appreciate that look. Do we want
48 to go with -- Jim.

1
2 **DR. TOLAN:** Thank you, Mr. Chairman. I just wanted to add one
3 more anecdotal note, to kind of follow-up with what both Harry and
4 Jason had talked about, in terms of the shallow water and this
5 reanalysis, and I don't think it's really appropriate for the
6 western side of the Gulf, because you've got a number of structures
7 that you can literally see from the beach in Texas, and they all
8 hold lots and lots of red snapper, and even all the way up into
9 the ship channel, where we have platform-building operations, and,
10 when we wall those off and de-water them, every single time we do
11 it, we get massive, massive numbers of red snapper, even up into
12 the ship channel, and so the fact that -- The notion that they're
13 just not there in these shallow areas I don't think really works
14 well for the western Gulf, but, again, that's just a very anecdotal
15 thing that I wanted to bring up. Thank you.
16
17 **CHAIRMAN NANCE:** Thanks, Jim. Let me ask, and so what Katie is
18 saying is it's just the uncharacterized bottom that's partitioned
19 and not the structures and things, and so would that still hold
20 up, Jim, in your opinion?
21
22 **DR. TOLAN:** It would, given everything that we have seen from these
23 absolute abundance estimates, and, again, these uncharacterized
24 bottom are a big part of it, and that's really our biggest part of
25 uncertainty, and I still think that that repartitioning doesn't
26 work well, given what I have seen, because, as soon as we put a
27 structure, even in the near-shore, in artificial reef area, just
28 something out there, I mean, it's completely covered in snapper
29 very quickly, and we just -- I am leery of saying that the shallow-
30 water zones are not holding red snapper, especially off of Texas.
31 Thank you.
32
33 **CHAIRMAN NANCE:** Thank you. Katie.
34
35 **DR. SIEGFRIED:** Jim Nance, you read my mind, and one of the things
36 that I was going to say is that the structures that Jim Tolan is
37 talking about aren't accounted for in this post-stratification,
38 and, on Slide 6, if you look at Texas, there is -- I am sorry it's
39 small, but you can blow it up on your screens, and, if you look at
40 Texas, the uncharacterized bottom is the only thing that changed,
41 by around two-million, and we actually reduced the uncertainty,
42 from 46 percent to 41 percent, by doing this post-stratification,
43 but the amount of fish that are estimated on natural and
44 artificial, which is what Jim was just talking about that would be
45 covered by structure, is unchanged, and so I just wanted to point
46 that out, in light of Jim Tolan's comments. Thank you.
47
48 **CHAIRMAN NANCE:** Thank you. Harry.

1
2   **MR. BLANCHET:** This point is to the uncharacterized bottom. If
3   you think about what that really is composed of, it is miles and
4   miles of miles of mud off Louisiana, interspersed with pieces of
5   junk, and every one of them pieces of junk, if conditions are
6   correct, are going to be holding fish, whether it's -- Whatever
7   size it is.
8
9   We know that there is those little patches of anything from a tree
10 that has washed out of the Mississippi River to a sunken vessel
11 that is unregistered to whatever fell off of a workboat twenty-
12 five years ago, and all of those things are out there, and many,
13 many more, and all of the have the capacity to hold some fish.
14
15 That is really -- When we think in terms of the uncharacterized
16 bottom, it's the diversity of stuff that is on that unclassified
17 bottom that is what brings up my concern, and I recognize that a
18 lot of -- That this is kind of what we were talking about earlier,
19 and, in the scheme of things, they're a rare-event thing, and you
20 have to cover a lot of territory to get adequate representation to
21 characterize just how many snapper are out there.
22
23 It's especially a challenge when it's something that you're going
24 back and trying to examine in greater detail than the original
25 scope of work was talking about, and so I don't know how much more
26 you could -- I mean, you could take something like some of the
27 estimates from off of Louisiana from the LGL survey and substitute
28 those density of estimates for zeroes, or something similar to
29 that, but that's kind of an apples-and-oranges type of thing.
30
31 The point that I had originally stuck my hand up for was there was
32 a mention of use of the random forest model in this reanalysis,
33 and did I get that correct?
34
35 **DR. SIEGFRIED:** We're using the starting point on the left of your
36 screen here that did incorporate the random forest, and then, in
37 the document that goes along with my presentation, the class, and
38 that's the random forest, high, medium, and low probability.
39
40 **MR. BLANCHET:** Okay. In the original -- I had made a comment to
41 the original draft of the Great Red Snapper Count about some issues
42 that I had with the random forest model off of Louisiana, and I
43 don't know if those ever got addressed or not.
44
45 Essentially, a major portion of what went into that random forest
46 model was fishery-independent longline surveys, and there was a
47 significant number of longline surveys from the states that had
48 resided at the Gulf States that I don't know if they ever got

1 incorporated into that, and I think they could have made a
2 difference in some of those high, middle, and low classifications.
3 That was not mentioned in the final report, and so, as best as I
4 could determine, it was only in the initial draft that I saw that
5 issue, but, if that issue is carried forward in this current
6 analysis, that would just exacerbate the problem. Thank you.
7
8 **CHAIRMAN NANCE:** Thank you, Harry. Trevor, please.
9
10 **MR. MONCRIEF:** Thank you, Mr. Chair. I think Harry kind of covered
11 it, and I think we're having a little bit of disparity on
12 uncharacterized bottom and how we're defining it and what we're
13 looking at it as, and not to characterize or mischaracterize what
14 Jim was speaking to, but, essentially, what I think he's speaking
15 to is the same thing we are, that there are individuals, or there
16 is biomass, on the structures associated with this area, the ten
17 to twenty-five meters, and that the uncharacterized bottom
18 includes all the mud and everything else and the interspersed
19 unidentified structure across-the-board.
20
21 Obviously, there would be fish inhabiting that as well, and so the
22 safer assumption, on my end, I think, for our area, would be that
23 it would match the ten to forty-meter findings, rather than the
24 assumption of zero, and I understand that's a constraint with the
25 project, but I think that's just kind of the confusion of where
26 we're going back and forth with, and so, if I'm incorrect on that,
27 by all means, correct me.
28
29 **CHAIRMAN NANCE:** You're correct, Trevor. Jason.
30
31 **MR. ADRIANCE:** Thank you, Mr. Chair. I'm feeling a little like
32 Harry right now, and I guess I'm still confused on this shift to
33 the twenty-five to forty. Looking at the magnitude of these
34 differences between these two graphs, most change by about two-
35 million on that uncharacterized, but there's a larger change in
36 Louisiana, and is that -- Is this because I am not understanding
37 this, where you mention about a shift to twenty-five to forty, and
38 was it also that that area, that amount of area, was also wiped
39 out when you made this change in Louisiana? I am still a little
40 confused on what happened in that stratification. Thanks.
41
42 **DR. SIEGFRIED:** Sure, and so let's see if I can say it a little
43 different way. Because we don't have the strata set up the same
44 way before and after, I can't say that things were moved to that
45 twenty-five to forty, and what I should say is, when we first did
46 this with Florida, we looked at the ten to forty, which just gave
47 us a number of forty-something-million fish in ten to forty, or
48 something like that, and so just a number in ten to forty.

1
2 When we did the post-stratified estimation, we didn't get a big
3 drop in the total. What we got was that the fish were allocated
4 to the twenty-five to forty, but we didn't get many in the ten to
5 twenty-five zone, and so I shouldn't say that they were shifted or
6 moved, because there wasn't a stratum there before to move them
7 to, but we didn't get like a splitting, like a halves, a splitting
8 in between the two, and what happened is more fish were in the
9 twenty-five to forty than we would have thought if it truly was a
10 homogenous distribution of fish from ten to forty.
11
12 If it was homogenous from ten to forty, the abundance would have
13 been split evenly between ten to twenty-five and twenty-five to
14 forty, but it wasn't. There is more fish in the twenty-five to
15 forty, and that's what we have seen in our surveys, and so we don't
16 -- We went into this, with the information from other surveys,
17 that we have more fish in our survey from twenty-five to forty-
18 meter depths, as opposed to ten to twenty-five, and that seems to
19 be the answer that we're getting from our post-stratification,
20 which helps us jibe with what we've seen in the past, at least for
21 the shallowest depth stratum.
22
23 **CHAIRMAN NANCE:** Thank you, Katie. Jim.
24
25 **DR. TOLAN:** Thank you, Mr. Chairman. I will just add one more
26 comment to this, and then I will put it to bed, from my end, and
27 I really appreciate all the work that Katie and her folks put in
28 to do this post-stratification, and I only bring up the point that
29 it may not be appropriate, especially on this side of the Gulf,
30 and I will go back to the original Stunz et al. work, and they
31 were, or they were, severely limited, by visibility issues in the
32 nepheloid layer, to get really good species composition to sort of
33 come up with what those numbers were.
34
35 When you do, afterwards, the post-stratification, it may not be
36 appropriate for this side, but that's all I really wanted to say
37 about this, but I appreciate all the work that has gone into it.
38 Thank you.
39
40 **CHAIRMAN NANCE:** Thank you, Jim. John, please.
41
42 **DR. WALTER:** Thanks, Mr. Chair. I just wanted to kind of reiterate
43 what our purpose here is and why we're working together with the
44 Great Red Snapper Count folks on this post-stratification that Rob
45 did, and, because we're tasked with developing catch advice for
46 you to consider, one of the key elements of that catch advice is
47 where are the fish and what would be accessible to the fishery,
48 and so it seemed really straightforward, when we looked at the

distributions of samples in Florida, that, when the majority of
fish were in the shallow depth bin of the Big Bend, that seemed to
not necessarily jibe with where the majority of the removals are
or where survey also put the fish.

The post-stratification, you will see in the presentation that I
give tomorrow, moves those fish out deeper, which actually is a
lot more in line with where we see those fish in our surveys, and
probably also means that they're at least placed in waters that
might not be as accessible to the fishery, and that's another
consideration.

This exercise was expanding it to the other states, to see if that
did something similar, in terms of accurately putting the fish and
then, when you see the Gardner analysis, the fishermen, and it's
not as big of a difference here, in I think the other states, as
we saw in Florida, and definitely it hasn't changed the numbers
all that much, because it increased the catch rate in the depth
bin, in the deeper depth bin, and reduced that catch rate in the
shallower depth bin for Florida, resulting in almost about the
same numbers, or a slight difference, and so it traded off, and it
looks like it's largely trading off in the other states, but it's
just putting fish probably a little more in line with where they
might be.

I think we have a little more uncertainty in Texas and Louisiana
and Alabama and Mississippi, as Jim, and others have pointed out,
but our surveys do suggest an increase in catch rate as you go
deeper between the ten and twenty-five, and the twenty-five to
forty is where you begin to see the highest catch rates, and is
likely to have higher densities on UCB than in the ten to twenty-
five, and that seems fairly well supported.

Unfortunately, we just -- There aren't samples for the Great Red
Snapper Count in that ten to twenty-five, and I don't know why
those samples don't exist, which would have made this
stratification really simple, but just that's why we're seeing the
best assumption here was zero, which we know is wrong. However,
it's the best that could be done with the data that was provided.
Thanks.

CHAIRMAN NANCE: Thank you, John. Mike.

DR. ALLEN: Thank you, Mr. Chairman. I just wanted to add a
comment. Looking this from kind of a ten-thousand-foot view, when
I reviewed it, I mean, I think this is really good news, and I
appreciate the analysis to do this post-stratification, but it
really didn't -- From an assessment standpoint, it doesn't really

73

1 make a big difference, which I think is reassuring.
2
3 There is not a huge difference in any of the numbers, the fish in
4 them, in the ten to forty or the ten to twenty-five zone, but the
5 overall estimates from the post-stratification are not
6 substantially different from the original, and so I think it's a
7 useful approach, but it doesn't change our conclusions much.
8
9 **CHAIRMAN NANCE:** Thank you. Sean.
10
11 **DR. POWERS:** Building on what John just told us, I would agree
12 that our survey data off of Alabama, and not the Great Red Snapper
13 Count, but the annual surveys we do, support that, when you move
14 from ten to twenty-five meters, and then twenty-five to forty
15 meters, the catch increases, and so I totally agree with that, but
16 I guess the point that we're talking about is the catch in that
17 ten to twenty-five isn't zero in our surveys. That is where I
18 have the roughest time, is the assumption that it's zero, and I
19 agree that it increases as you go to the deeper depth, but it's
20 not zero in that shallower depth.
21
22 **CHAIRMAN NANCE:** I think that's what is being pointed to, is that,
23 since there are no data in there, the assumption is zero, but we
24 all know that it's not, and so how do we rectify that. One thing
25 is it looks like, from a standpoint of these analyses, that most
26 -- I will speak from what I am seeing, and you can correct me if
27 I'm wrong here, but most seem to be the Florida data seem to be
28 amenable to doing this post-stratification, but Texas, Louisiana,
29 Alabama, and Mississippi don't have that same ability to allow for
30 post-stratification. Dave.
31
32 **DR. CHAGARIS:** Thank you, Mr. Chairman. I was just going to say
33 exactly what you just said, and, basically, if we don't have the
34 samples to post-stratify, then we shouldn't do the post-
35 stratification, and, to me, it's a pretty simple decision, and it
36 doesn't seem to have a big effect either way, and probably some of
37 that is due to assuming zero rather than imputing, and so I would
38 be open to taking the post-stratified estimates, where we have the
39 data, and then using the original estimates. How you deal with
40 the zeroes is you just don't post-stratify, and so you get the
41 overall mean for the larger depth strata, and so it seems like a
42 pretty straightforward way to go.
43
44 **CHAIRMAN NANCE:** Yes, and so, from an SSC standpoint, what do we
45 want to do? I am hearing -- Do we have any issue with the post-
46 stratification for Florida? Trevor.
47
48 **MR. MONCRIEF:** No, and I think everyone is pretty well in agreement

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1 across that, and I was wondering, and is this something we need a
2 motion for to move forward with?
3
4 **CHAIRMAN NANCE:** Preferably a motion. Yes, sir.
5
6 **MR. MONCRIEF: I mean, I think something just to the effect of the**
7 **SSC agrees that the post-stratification for the State of Florida**
8 **is accurate and should be included in the overall estimate for the**
9 **Great Red Snapper Count.**
10
11 I don't know if anything should be mentioned for the other states
12 at this point, given that we're just stating it for Florida, and
13 I think the discussion we've had so far, in the minutes, will
14 reflect the reason why we made the motion itself, but, if any
15 changes that need to be made to it, I'm fine with it, but I think
16 that's the only conversation I feel like, personally, I'm in
17 agreement with.
18
19 **CHAIRMAN NANCE:** Thank you. Let me read the motion, as Trevor has
20 stated. **The SSC agrees that the post-stratification for the State**
21 **of Florida is accurate and should be included in the overall**
22 **estimate of the Great Red Snapper Count.** Do I have a second for
23 that motion?
24
25 **MR. ADRIANCE:** I will second.
26
27 **CHAIRMAN NANCE:** Jason, thank you. Is there discussion? Jason.
28
29 **MR. ADRIANCE:** Thank you, Mr. Chair. **Would it be better to say**
30 **"is appropriate", instead of "accurate"?**   That's just a
31 wordsmithing thing, but I have no qualms either way.
32
33 **MR. RINDONE: I think perhaps "post-stratification analysis", to**
34 **the motion makers.**
35
36 **CHAIRMAN NANCE:** Trevor, are you okay with that change?
37
38 **MR. MONCRIEF: That's exactly what I was going to say.**
39
40 **CHAIRMAN NANCE:** Okay. Perfect. Okay. Trevor, thanks for making
41 that. Harry.
42
43 **MR. BLANCHET:** It's not to this point, and so I will pass at this
44 point.
45
46 **CHAIRMAN NANCE:** Okay. Thank you. Any other discussion for this
47 particular point? Luiz, please.
48

1   **DR. BARBIERI:** Not to overcomplicate things, but I guess it's
2   unavoidable for us to wonder, and what does that do to the final
3   estimate to the Great Red Snapper Count, meaning that the estimate
4   of the Great Red Snapper Count gets changed, as a result of this
5   post-stratification, and I mean officially?
6
7   **CHAIRMAN NANCE:** We have a -- The way we're going to look at these
8   analyses is we have an analysis that's going to be done with the
9   Great Red Snapper Count as-is, and so that was, I think, ninety-
10 six million, or something like that.
11
12 The   post-stratification,   if   we   did   just   Florida   post-
13 stratification, that would change that a tiny bit, and all the
14 other states, Texas, Louisiana, Mississippi/Alabama, would stay
15 the same, and Florida would change by about two-million pounds,
16 and we would see that in that analysis, and then adding the
17 Louisiana to this, or the LGL change, you would have Texas -- You
18 would have Texas staying the same, and Louisiana would change,
19 potentially, and you would have Alabama/Mississippi stay the same.
20
21 In Florida, you would have to run two scenarios, because you would
22 have both, and so you would have regular and post-stratification
23 with Florida, and so that would be a couple of different runs, but
24 that's the way I am seeing this come out, is you would have to run
25 this with two Louisiana datasets, and Florida with two datasets,
26 one being the Great Red Snapper Count without post-stratification
27 and with post-stratification.
28
29 **MR. RINDONE:** Mr. Chair, that's the herd that we were talking about
30 thinning prior to lunch. Here, if you guys are saying that -- If
31 this motion passes, which it's still on the table, at that point,
32 you could say -- If you weren't going to consider post-
33 stratification for the other states, but you were going to consider
34 it for Florida, then that gives the Science Center marching orders
35 for what to do with that catch analysis, and so then they could do
36 a post-stratification catch analysis, including the LGL estimate,
37 and then one not including the LGL estimate, and then would be
38 essentially two versions, as opposed to four that you just
39 recounted.
40
41 **CHAIRMAN NANCE:** Luiz.
42
43 **DR. BARBIERI:** Just to clarify then, that probably means that there
44 is a -- There is a Great Red Snapper Count report that was
45 published, and they have their official numbers, and so this would
46 be the result of the SSC's request for adjustment of that number,
47 as it gets included in the analysis for management advice.
48

1   **CHAIRMAN NANCE:** I think, as -- Anyway, and my brain is going here.
2   As Greg has said, the Great Red Snapper Count number is done, and
3   the report is out, and here is what it is, and so anything we do
4   after the fact is based on our manipulation of that, and it's not
5   the Great Red Snapper Count number anymore.
6
7   **DR. BARBIERI:** Right, and, if I may, as a quick follow-up, I
8   understand that, and that makes sense, and I just wanted to have
9   this discussion explicitly here, because I think it helps avoid
10 questions that a whole lot of people may have going into the future
11 about what those numbers are from that study, as they were
12 produced, versus what we are doing here and the significance of
13 that as we integrate that into management advice.
14
15 **CHAIRMAN NANCE:** Thank you. Katie, to that point?
16
17 **DR. SIEGFRIED:** Jim, you pretty much made my point, and, if I may
18 speak after the rest of the folks on the hands-up list, that would
19 be great.
20
21 **CHAIRMAN NANCE:** Absolutely. Thank you. Will, please.
22
23 **DR. PATTERSON:** I am happy to go, but it looks like Harry is in
24 front of me.
25
26 **CHAIRMAN NANCE:** Harry said he's not talking about this point, and
27 so he wanted to wait.
28
29 **DR. PATTERSON:** Okay. Thank you, Mr. Chair. There seems to be
30 some confusion about some of the language here. The SSC agrees
31 that the post-stratification analysis for the State of Florida is
32 appropriate and should be included in the overall estimate in the
33 Great Red Snapper Count.
34
35 The Great Red Snapper Count estimate was modified twice, and there
36 was an initial question about using the random forest model and
37 going with a simple stratified random design, which produced a
38 higher estimate, and then reverting, in the addendum, to the
39 original random forest design, and so those estimates produced by
40 the Great Red Snapper Count team, led by Greg Stunz, those
41 estimates are set, right, and that report has been submitted, quite
42 a while ago, to Sea Grant.
43
44 As far as the restratification of Florida, I think it's important
45 to remember that the stratification that was used by the Great Red
46 Snapper Count team was prescribed by the RFP that funded the
47 research, and so the question arose about do we see fish, and the
48 Florida FWC folks, and some of the NMFS folks, said do we see fish

1 in the shallowest parts of the shallow stratum in the
2 stratification from the Great Red Snapper Count, and they
3 questioned that, and so we all got together and we looked at it.
4
5 That's not really a Great Red Snapper Count product. It's a
6 restratification following the publication of the Great Red
7 Snapper Count report, and so I think we just need to be careful,
8 in motions and discussions, to signify that, you know, that was
9 done based on input from outside folks, and then the SSC reviewed
10 parts of that rationale, at the last meeting, and so, moving
11 forward, this is a new analysis using the data and the modeling
12 approach from the Great Red Snapper Count study, but dividing that
13 shallowest stratum into two strata now that reflect what Katie has
14 discussed earlier.
15
16 **CHAIRMAN NANCE:** Will, I agree with that totally, and I think that
17 end part, the overall estimate of the Great Red Snapper Count,
18 probably needs to be changed, because this does not have anything
19 to do with -- We're just simply using that data.
20
21 **DR. PATTERSON:** Sure.
22
23 **CHAIRMAN NANCE:** Ryan.
24
25 **MR. RINDONE:** Thanks, Mr. Chair. If I can throw something at the
26 wall and see if you guys like this. Included in the overall
27 estimate informed by the Great Red Snapper Count, since that was
28 that base data that you started working with, and then there's
29 been modifications that have happened along the way, and so the
30 overall estimate informed by the Great Red Snapper Count, and,
31 Will, since you spoke last directly to this, what do you think
32 about that?
33
34 **CHAIRMAN NANCE:** How about the Great Red Snapper Count data?
35
36 **MR. RINDONE:** Or by the finalized Great Red Snapper Count data,
37 yes.
38
39 **DR. PATTERSON:** I would say data and random forest design.
40
41 **CHAIRMAN NANCE:** Okay. Thank you, Will. Trevor.
42
43 **DR. PATTERSON:** The second point that I wanted to make has to do
44 with the various potential models that Jim mentioned at the
45 beginning here, and it seems, to me, that this motion would allow
46 that list to get shorter, and this sort of consensus discussion
47 between folks in Texas, Louisiana, Alabama that assuming a
48 shallower stratum, a fourth stratum, in those areas that had zero

1 red snapper is a bad idea, and so we could probably cross those
2 off the list. It seems like we're converging now down to just one
3 or two model runs.
4
5 **CHAIRMAN NANCE:** Yes. Thank you. Let me ask Trevor and Jason,
6 and are you both okay with this change in the motion?
7
8 **MR. MONCRIEF: I am good with it.** Based on the conversation,
9 should we be more explicit about what this estimate will be used
10 for, or do you think the motion, as-is, is representative?
11
12 **CHAIRMAN NANCE:** I think, from my opinion, right now, it's
13 representative of what we've talked about.
14
15 **MR. MONCRIEF:** Okay.
16
17 **CHAIRMAN NANCE:** As long as you two are comfortable with it, I am.
18
19 **MR. ADRIANCE:** I am good with it as well, and my only thought was
20 where I think Trevor was going, to maybe add that it -- The estimate
21 we ultimately use for catch advice, or something along those lines,
22 but I am okay with it.
23
24 **CHAIRMAN NANCE:** Okay, because I think, right now, what we're
25 talking about is simply post-stratification. When we get into our
26 analyses that the Center is going to provide with us on Wednesday
27 and Thursday, that's when we're going to deal with all of these
28 different models, to come up with OFL and ABC.
29
30 **DR. PATTERSON: Jim, I just think you need to add, in here, overall**
31 **estimate of age-two-plus red snapper in the U.S. Gulf of Mexico.**
32
33 **CHAIRMAN NANCE:** Okay. Of age-two-plus, right, red snapper. Okay.
34 Perfect. Thank you, Will. I think that helped. Okay. Will,
35 thank you. Jim.
36
37 **DR. TOLAN:** Thank you, Mr. Chairman. My point isn't exactly to
38 the motion, and so I will yield.
39
40 **CHAIRMAN NANCE:** Okay. Thank you. Katie, I will skip you for
41 right now. Trevor.
42
43 **MR. MONCRIEF:** I was going to comment to the motion, and so I'm
44 good.
45
46 **CHAIRMAN NANCE:** Okay. Jason.
47
48 **MR. ADRIANCE:** I was just anticipating commenting on the change,

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1 and I'm good.
2
3 **CHAIRMAN NANCE:** Okay. Let me go ahead and read this motion. **The**
4 **SSC agrees that the post-stratification analysis for the State of**
5 **Florida is appropriate and should be included in the overall**
6 **estimate of age-two-plus red snapper in the Gulf of Mexico informed**
7 **by the finalized Great Red Snapper Count data and random forest**
8 **design. Is there any opposition for this motion? Hearing none,**
9 **the motion carries without opposition.** Okay, Harry.
10
11 **MR. BLANCHET:** This is perfect, and so, basically, what the -- To
12 me, while it is appropriate, and could be included, the -- I don't
13 know how much difference a million fish here or there is going to
14 make in terms of the overall analysis, and it just -- It's a small
15 fraction, and it's just -- I didn't want to vote against the motion
16 and I think that there's too much good information in that motion,
17 but I just don't know if that stratification in the State of
18 Florida does enough difference to make it worth throwing the extra
19 complexity into the situation. That's all.
20
21 **CHAIRMAN NANCE:** Thank you, and I think the key is here that there
22 was a potential issue pointed out with this shallow-water area in
23 Florida and trying to rectify that, and so, when we see the
24 analyses on Wednesday and Thursday, I think that's when all of
25 this will come together, where we, as an SSC, need to decide which
26 of these model variations provide us with the best scientific data
27 that we can use to come up with an OFL and ABC, and so this is
28 going to be one of the runs.
29
30 We may say this provides too much complexity, and we're not going
31 to look at it, those types of things, but at least, I think, having
32 run it, it allows us to be able to look at those different analyses,
33 instead of saying, well, I wonder what it would do with this, and
34 so I think it will allow us to do that, and then we can have that
35 discussion on Wednesday and Thursday, but I appreciate your point,
36 Harry. Jim.
37
38 **DR. TOLAN:** Thank you, Mr. Chairman. You have provided the perfect
39 segue into the point that I was going to bring up, and, from what
40 I am gathering, this analysis, coming into this meeting, it's going
41 to be a combination of some states are not going to change their
42 numbers, and we're going to substitute some numbers for other
43 states, and we have this re-post-stratification for some states,
44 and so we're going to be presented with basically a buffet of
45 potential OFL and ABC numbers to present as advice, and so I'm
46 just -- At this point, I'm not comfortable with just sort of
47 picking which one is the better one.
48

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1 I just want to make sure there's a good scientific basis behind
2 it, because it looks like we're going to be presented with a whole
3 bunch of OFL and ABC numbers, and it's like, well, okay, which one
4 do you pick, and so thanks for walking us into that.
5
6 **CHAIRMAN NANCE:** Well, if you look at it as a buffet, I think what
7 the key is, when we have our discussion, we're going to be
8 presented with all these analyses that have been done, and we're
9 going to have to come up with our best recommendation, from a
10 science standpoint, on which one of these provide the most risk-
11 averse advice for red snapper in the Gulf of Mexico, and that's
12 the key, and I think that's where we're trying to take this.
13 Katie.
14
15 **DR. SIEGFRIED:** Thank you, Mr. Chair. So many people have been
16 making so many good points, and I want to make a -- Jim makes a
17 great point that the buffet of information is exactly what we're
18 trying to avoid, for a few reasons, and not just workload, but how
19 do you decide, across all of those potential numbers, if the basis
20 for providing them isn't decided first?
21
22 Not only reducing work for my staff, but, for instance, this motion
23 here, to me, means that the State of Florida post-stratified number
24 would replace the State of Florida number in the total estimate
25 that we use, and it doesn't seem useful, to the group, to provide
26 so many numbers and then no guidance as to which ones are based on
27 the best science.
28
29 For instance, the current presentation that you have on the website
30 shows the 96.7 million number. If we used the 46.9 million number
31 for the post-stratified estimate, that would drop by less than two
32 million, but it wouldn't make sense to provide both, because you
33 had already decided that the Florida post-stratified estimate is
34 better, or better for this catch advice, and not necessarily a new
35 Great Red Snapper Count, and that was something that another person
36 had mentioned before, is none of this is meant to change the Great
37 Red Snapper Count.
38
39 It's just a frequent thing for SEDAR, where a study, a research
40 project, is presented to us to use, and we sort of fine-tune it
41 and make it more useful for assessment purposes, and so we don't
42 mean to change the Great Red Snapper Count number, and I am in
43 full agreement with Will that we should probably figure out a way
44 to stop calling it the new Great Red Snapper Count number, and so
45 those are the just the two points that I wanted to make that
46 related to this motion, but I did want to mention something about
47 Texas, should you decide to continue discussing that afterwards,
48 because we didn't zero-out anything in ten to twenty-five meters,

1 the way we did for Mississippi/Alabama and Louisiana. I just
2 wanted to make sure that that was understood before that was
3 abandoned. Thank you.
4
5 **CHAIRMAN NANCE:** Okay. Thank you, Katie. Doug.
6
7 **MR. GREGORY:** Thank you. I will be quick. Katie said what I was
8 going to say about this, and I felt the same way about the LGL
9 study this morning. I would like to make these decisions as we go
10 and not wait until the end and have that buffet for us to pick and
11 choose, and so I hope we get back to the LGL study today and make
12 a decision of whether to use it or not, but to look at both the
13 Great Red Snapper Louisiana data and LGL and have both those runs,
14 and so we need to keep it simple. Thank you.
15
16 **CHAIRMAN NANCE:** Okay. Thank you, Doug. Will.
17
18 **DR. PATTERSON:** Thanks, Mr. Chair. I agree with Doug and Katie on
19 those points about decisions should be made upfront and not after
20 numbers are produced. It seems to me there are three particular
21 issues that need to be decided by the SSC, and one had to do with
22 the Florida restratification, which was done in this last motion,
23 and the other one has to do with a restratification elsewhere, and
24 I thought that one had been put to bed, but Katie just made a
25 comment about Texas and the new shallow stratum in Texas, and so
26 perhaps that needs further discussion.
27
28 Then the third one would be what is the best approach for the
29 estimate from Louisiana, and, obviously, we've had some discussion
30 here, and Doug just mentioned now that he wished we had made a
31 decision as that was being discussed, but those seem to be the
32 three important things that need to be considered, and I think
33 that's probably where the SSC discussion should go.
34
35 **CHAIRMAN NANCE:** I agree with that. Thank you. Tom.
36
37 **DR. FRAZER:** I agree too, and I was just trying to figure out how
38 to convey this to the council, right, in a very simple way, and I
39 think there are a couple of decision points. The starting point,
40 it seems like everybody would agree, is the 96.6, or 96.7, million
41 pounds.
42
43 The two decision points are whether or not you incorporate the LGL
44 data, and, if you do that -- I mean, I'm just thinking kind of
45 what these numbers would look like, so they make sense to people.
46 You know, that's nine million pounds off of that 96.6 million, and
47 then, if you decide to incorporate the post-stratified Florida
48 data, that's another 1.4 million pounds, and so, overall, the

number changes that you working with, from 96.6 to 86.2, and, as
Will pointed out, Katie just raised a question about Texas, which
I probably need some clarification on, but that would make it
simple, and I would agree with everybody that just spoke.

CHAIRMAN NANCE: Thank you. Steven.

DR. SAUL: Thank you, Mr. Chair. The same comment as others, to
please -- For us to have discussion and decide on the studies a
priori to having the numbers re-run, and it's kind of cheating if
we're looking at what the benchmark numbers will be and making
decisions based on that, versus on the science. Thank you.

CHAIRMAN NANCE: Thank you. David.

DR. CHAGARIS: Thank you. I was going to go ahead and visit that
Texas issue, and I was a little bit confused as well, and I was
trying to figure out whether zeroes were applied or not, but I
would be in favor of including Texas into this motion, for the
same reason that we're including Florida, but, also, it did reduce
the -- Lower the CV with the post-stratification estimate as well,
which means it's probably accounting for some of the variance
across the depth stratum better, and so I would say -- I would be
in favor of adding Texas.

CHAIRMAN NANCE: Okay. Thank you. I think we leave this one
alone, and so let's go ahead and -- Will, you outlined it very
well, and I appreciate that, and I appreciate this discussion. As
we move things forward, we want to make sure that we're all
comfortable with what's going to happen next, and so we do have
Florida.

While we've said that we agree that the post-stratification
analysis for the state is appropriate, and should be included,
it's whether we're going to include it or not, and so we need to
have a motion for, in our analysis, for the State of Florida, are
we going to look at data with the stratification that was produced
during the Great Red Snapper Count and the random forest design or
are we going to look at using the post-stratification analysis
with the Great Red Snapper Count data and the random forest design,
and so that is a question that we need to resolve. I am open to
having a motion on that. Roy.

DR. CRABTREE: The motion here, we already passed without
objection? All right. So we want to make a decision about Texas
and then make a motion, and, if that passes or doesn't pass, then
that's where we're going to go for the analysis, or how do you
want to do it, because I'm not sure where we are on the Texas side.

1
2 **CHAIRMAN NANCE:** We can do Texas first. Jim, I would like to hear
3 your opinion on Texas post-stratification.
4
5 **DR. TOLAN:** Thank you, Mr. Chairman. I was just going to disagree,
6 especially with Dave, and, given that the initial Great Red Snapper
7 Count off of Texas was limited by a low number of sample sizes in
8 that area that we've been discussing, and the visibility and the
9 nepheloid layer issues that hampered the species identification,
10 I just don't think that the water clarity that we can focus on off
11 of Florida is remotely near what we have off of Texas, and so I
12 don't think this post-stratification -- While it did lower the CV
13 somewhat, I just don't think it's appropriate for off of Texas.
14 Thank you.
15
16 **CHAIRMAN NANCE:** Luiz, to that point?
17
18 **DR. BARBIERI:** Just a quick clarifying question for Katie. Katie,
19 the post-stratification analysis for the other states, was that
20 conducted by Rob Ahrens as well?
21
22 **DR. SIEGFRIED:** Yes. Yes, it was.
23
24 **DR. BARBIERI:** Okay. Thank you.
25
26 **CHAIRMAN NANCE:** Okay. Thank you, Jim. Harry.
27
28 **MR. BLANCHET:** My point was that, basically, when you've got --
29 When you're doing this more stratified, that is going to change
30 your CVs, and it doesn't necessarily -- Because you're measuring
31 smaller units, a smaller CV does not necessarily mean that you're
32 getting better at it.
33
34 **CHAIRMAN NANCE:** I am thinking. Roy.
35
36 **DR. CRABTREE:** I mean, I'm comfortable that the Center analysis,
37 the catch analysis, should be based on the Florida post-
38 stratification. I think that's an improvement, and we ought to
39 use that.
40
41 The Texas, I don't know, and we've heard two different opinions
42 there, and I'm not hearing anyone else, and I don't know what the
43 answer there is, and so, unless someone at the Science Center can
44 give us some advice, or someone has looked at this, I guess where
45 we're going to go with that is to just leave it as it was done in
46 the original Great Red Snapper Count, but I would be curious as to
47 whether the folks at the Center, who have worked with this data,
48 have a feeling one way or another as to how we should go. I

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1   suspect that it doesn't make that much difference either way.
2
3   **CHAIRMAN NANCE:** For Texas, it made -- Again, it's about two
4   million pounds, and the CV changes a little bit. It goes from 46
5   to 41. Katie, do you have an opinion on that one, or John?
6
7   **DR. SIEGFRIED:** I do, and I don't know if John is going to say the
8   same thing though, and I don't have a Center opinion for you here,
9   and I don't need to necessarily defend the post-stratification.
10 My job here is just to give you all the information from the runs,
11 and what I heard some of the folks saying made it seem, to me,
12 like I might have not conveyed what happened for the Texas run.
13
14 The documentation that is on the SSC site, it breaks down the Texas
15 post-stratification, or restratification, in fine detail, as it is
16 for Florida. We did have, or the Great Red Snapper Count did
17 collect information in the uncharacterized bottom in the ten to
18 twenty-five-meter depth zone off of Texas, and the estimate is
19 actually over seven million fish off of Texas.
20
21 There was no assumption that that depth zone was devoid of fish,
22 and so I wanted to make sure that I didn't convey that earlier and
23 that people have a chance to pull up that document to take a look.
24
25 As to the CV, all of the standard errors are also listed in the
26 document, and you can look at the way that the estimate is
27 characterized across depth zones, across north, central, and south
28 Texas, and across the classes, or the classes actually aren't
29 relevant in Texas, and they're just relevant in Florida, but it's
30 all there for you to take a look at the new estimate, and it does
31 only drop it by a little over two million, by separating that
32 otherwise homogenous depth zone into two, but I wanted to make
33 sure you didn't think that that was something we did for Texas,
34 that we assumed any zeroes there.
35
36 In our discussions with Rob, who did do all of these, there was
37 much better data for Texas and Florida than the other states to do
38 this analysis, and the only assumption he has to make is the
39 proportion of UCB across all of Texas, and the great big State of
40 Texas has a lot of area there, and so we had to make an assumption
41 about the proportion of UCB, and so I don't have a Center opinion
42 for you, and John may, but I just wanted to make sure that you had
43 all of the information to make your informed decision. Thanks.
44
45 **CHAIRMAN NANCE:** Thank you, Katie. John.
46
47 **DR. WALTER:** Thank you, Chair. I don't have a Center opinion, but
48 I would tend to look at it from a scientific viewpoint and say

1   that maps would be very helpful to make this decision upon. Right
2   now, we're looking at just total estimates, which don't give us
3   any information as to whether we put fish in the right place, but
4   I think, on the maps, and particularly the presentation that I
5   will show tomorrow, will help to inform, and I will just refer
6   people, and, if they want to get kind of a heads-up on what we'll
7   present, and it might motivate this discussion, in particular, one
8   of the slides, Slide 12, and 13, will show different spatial
9   distributions. Sorry. It's 10 and 11.
10
11 You will see clearly what the post-stratification of Florida does,
12 and it moves those fish out deeper, and that tends to match where
13 our surveys see fish, and you'll see the difference between where
14 the Karnauskas mapping of the fish would be relative to the Great
15 Red Snapper Count, by depth, and the Great Red Snapper Count puts
16 a fair bit of biomass in the shallowest depth bin in Texas and
17 Louisiana and Alabama/Mississippi, whereas our survey data, and
18 the Karnauskas map, would move those fish further out, primarily
19 in the twenty-five to forty depth bin.
20
21 It doesn't have a major difference on the total population numbers,
22 but it does have an impact on where those fish might be, which
23 affects the assumption and the key assumption, decision point, for
24 the SSC on what fraction of the UCB to include in the advice
25 framework, and so, if those fish are accessible to the fishery,
26 then more of the UCB would be accessible to the footprint of the
27 fishery. If those fish are far offshore, in bottom that is not
28 well known, or well identified, by fishers, it may be less
29 accessible. I think putting them in space may help you in that
30 decision, and I would refer people to those maps, which might help
31 to illustrate that. Thanks.
32
33 **CHAIRMAN NANCE:** Thank you. Dave, please.
34
35 **DR. CHAGARIS:** Apologies about before and trying to recommend a
36 change to a motion that already passed, and I am prepared to make
37 a motion for Texas, but, before I do that, I wanted to point out
38 what Jim Tolan said earlier, about not going with the post-
39 stratification estimate because of the water clarity.
40
41 Well, those same -- It's the same data as what is used in the
42 unstratified estimate, and, if we can't -- If we aren't comfortable
43 with them, then maybe that says something about the Texas estimate
44 in general, because it's not like the post-stratification used
45 different instruments, or only went out in clear water, and it's
46 the same data, and so I just wanted to point that out, but I am
47 ready to make a motion.
48

1 **CHAIRMAN NANCE:** Okay. Please do.

2

3 **DR. CHAGARIS: You can basically copy-and-paste the motion above**
4 **and replace "Florida" with "Texas", and I don't have any other**
5 **changes beyond that.**

6

7 **CHAIRMAN NANCE:** Okay. Do we have a second for this motion? Roy
8 seconds the motion. Let me read the motion, for discussion. **The**
9 **SSC agrees that the post-stratification analysis for the State of**
10 **Texas is appropriate and should be included in the overall**
11 **estimated of age-two-plus red snapper in the Gulf of Mexico**
12 **informed by the finalized Great Red Snapper Count data and random**
13 **forest design.** We will go ahead and open it up for discussion.
14 Trevor.

15

16 **MR. MONCRIEF:** Thanks, Mr. Chair. I am glad the motion got seconded
17 for discussion, and I am trying to think about this, and I am
18 trying to wrap my head around all of it, and so, for Florida, with
19 me at least, there was a large amount of evidence, from not only
20 the state folks, but also the Science Center folks, to be able to
21 say, all right, we've got these surveys that show this disparity
22 that doesn't match up with the findings and everything else, and
23 I feel like that was well supported, and I could definitely
24 visualize the key differences that were being observed.

25

26 On the Texas side, I am trying to wrap my head around it a little
27 bit, because it seems like, essentially, what we're doing is saying
28 this is something, for Florida, that was backed up by evidence and
29 is correct, and the exact same principles should apply to Texas.

30

31 Now, I am certainly not an expert in Texas geography and the Texas
32 fishery, and I would lean a lot on Texas folks to be able to inform
33 me, but that's kind of where I'm -- That's kind of where I am
34 getting hung up on the motion. If I am mischaracterizing that, or
35 missing it, someone help me out, because I want to make sure that
36 I'm thinking about this the right way, but that's kind of how I'm
37 looking at it right now.

38

39 **CHAIRMAN NANCE:** Thank you, Trevor. Jim Tolan, please.

40

41 **DR. TOLAN:** Thank you, Mr. Chairman. I certainly agree with Dave
42 that is the same data, whether it's post-stratified or not, and
43 what I sort of fall back on is that big long line of R code that
44 was shown in the LGL presentation, and it's the proportion of what
45 was a red snapper versus what was a total. Given that a lot of
46 these are going to be acoustic information, because we just didn't
47 have much, in terms of the visibility, to count, like we do on the
48 other side of the Gulf.

1
2 Given the small sample sizes on the unconsolidated bottom, and the
3 expansion factor, given the total areal coverage of -- There is a
4 lot of shelf off the State of Texas, and I just can't support this
5 motion as it is, as it's written now. Thank you.
6
7 **CHAIRMAN NANCE:** Okay. Thank you. Any other discussion on this
8 motion? Roy.
9
10 **DR. CRABTREE:** It seems to me, when you look in the report, I mean,
11 there was data to base doing this sort of post-stratification
12 available in Florida and in Texas, and the reason we had problems
13 with doing it off of Louisiana and Mississippi and Alabama was
14 because there really wasn't, and so a zero was assumed for the
15 inner strata, and that's not the case in Texas, and so I am going
16 to support the motion. It does seem, to me, to be consistent with
17 how we did it in Florida, and I think it's an improvement.
18
19 **CHAIRMAN NANCE:** Thank you. Luiz, please.
20
21 **DR. BARBIERI:** I have nothing to add. Roy just made the points
22 that I was going to make, and, in terms of when you compare the
23 methodologies that were applied to Florida and Texas, I think that
24 they are comparable, and so, if we accepted one, it's kind of
25 difficult to justify not accepting the other, because the logic
26 would be the same.
27
28 **CHAIRMAN NANCE:** Okay. Thank you. Harry, please.
29
30 **MR. BLANCHET:** I'm sorry, Luiz, and the logic may be the same, but
31 the data is different though. I think that there is no question,
32 in my mind, that, if, you look at ten or twelve meters of water
33 depth off the State of Louisiana, there is a few places that you're
34 going to find red snapper on unconsolidated bottom, but it is not
35 in the densities that you are going to see when you get to twenty-
36 five or thirty, and so, yes, there's a big difference in the
37 density over that -- Over all the region, and I'm assuming that
38 something similar happens in Texas, but Texas has got more saline
39 water closer to the beach than we do in Louisiana, and so it's not
40 same, but I am saying similar.
41
42 I do have a problem with zeroing-out, essentially, that shallow
43 zone, and it just does not -- I think there might be some other
44 way to skin that cat to get a better estimate, but I don't think
45 that this works as well for Texas as it does in Florida, and that's
46 just my perception on it.
47
48 **CHAIRMAN NANCE:** Okay. Thank you, Harry. Like has been pointed

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out, in Texas, it's not zeroed-out, but there actually are data in
that strata that are being used to estimate the density. Trevor.

MR. MONCRIEF: Harry touched on it a little bit, but I think Luiz's
point is correct that the logic is the same, when it comes to how
the Great Red Snapper Count data are treated, but the information
behind Florida -- There's a lot more that was done to support it,
and I think --

I am struggling with saying that one state on the eastern side of
the Gulf of Mexico, that had a lot of evidence that there was a
difference that occurred, should lead to us treating a state that's
in the very west of the Gulf of Mexico, to me that kind of operates
differently, as far as the habitat and everything else, that we
would treat them the exact same way. Yes, while the logic is true
for how we would treat the data, and the data that's available,
the evidence behind it, to me, doesn't match, and that's kind of
what I am struggling with here.

CHAIRMAN NANCE: Thank you, Trevor. Jim, again.

DR. TOLAN: Thank you, Mr. Chairman. I am going to channel my
best Bob Gill, and I'm going to call for the question. I think
that's what it's called, right?

CHAIRMAN NANCE: Okay. Good. I appreciate that. Let's go ahead
and -- I know there will be some opposition to this, and let's go
ahead and -- I am going to read the motion, and then we'll go ahead
and Jessica will take a roll call on this one.

**The SSC agrees that the post-stratification analysis for the State
of Texas is appropriate and should be included in the overall
estimate of age-two-plus red snapper in the Gulf of Mexico informed
by the finalized Great Red Snapper Count data and random forest
design.**

MS. MATOS: Jim Tolan.

DR. TOLAN: I will vote no.

MS. MATOS: Sean Powers. Trevor Moncrief.

MR. MONCRIEF: I am going to vote no on this one.

MS. MATOS: Doug Gregory.

MR. GREGORY: Yes.

1   **MS. MATOS:** David Chagaris.
 2
 3   **DR. CHAGARIS:** Yes.
 4
 5   **MS. MATOS:** Lee Anderson.
 6
 7   **DR. ANDERSON:** Abstain.
 8
 9   **MS. MATOS:** John Mareska.
10
11   **MR. MARESKA:** No.
12
13   **MS. MATOS:** Jack Isaacs.
14
15   **DR. ISAACS:** No.
16
17   **MS. MATOS:** Steven Saul.
18
19   **DR. SAUL:** No.
20
21   **MS. MATOS:** Rich Woodward.
22
23   **DR. WOODWARD:** Abstain.
24
25   **MS. MATOS:** Will Patterson.
26
27   **DR. PATTERSON:** Abstain.
28
29   **MS. MATOS:** Paul Mickle. You have to enter your audio PIN, Paul.
30   Benny Gallaway.
31
32   **DR. GALLAWAY:** Yes.
33
34   **MS. MATOS:** Harry Blanchet.
35
36   **MR. BLANCHET:** No.
37
38   **MS. MATOS:** Jason Adriance.
39
40   **MR. ADRIANCE:** No.
41
42   **MS. MATOS:** Luke Fairbanks.
43
44   **DR. FAIRBANKS:** No.
45
46   **MS. MATOS:** Mandy Karnauskas.
47
48   **DR. KARNAUSKAS:** Yes.

1
 2 **MS. MATOS:** Steven Scyphers.
 3
 4 **DR. SCYPHERS:** No.
 5
 6 **MS. MATOS:** Jim Nance.
 7
 8 **CHAIRMAN NANCE:** Yes.
 9
10 **MS. MATOS:** David Griffith.
11
12 **DR. GRIFFITH:** Yes.
13
14 **MS. MATOS:** Roy Crabtree.
15
16 **DR. CRABTREE:** Yes.
17
18 **MS. MATOS:** Luiz Barbieri.
19
20 **DR. BARBIERI:** Yes.
21
22 **MS. MATOS:** Michael Allen.
23
24 **DR. ALLEN:** Yes.
25
26 **MS. MATOS:** Cindy Grace-McCaskey.
27
28 **DR. GRACE-MCCASKEY:** Yes.
29
30 **MS. MATOS:** Josh Kilborn.
31
32 **DR. KILBORN:** No.
33
34 **MS. MATOS:** Sean Powers.
35
36 **DR. POWERS:** No.
37
38 **MS. MATOS:** Paul Mickle.
39
40 **CHAIRMAN NANCE:** Okay. What does that come up to? **The motion**
41 **fails eleven to ten with --** Thank you. I appreciate those votes
42 on this one.
43
44 Anyway, let's go ahead, and we need to move on to -- So, for Texas
45 -- For Florida now, we need to decide whether we're -- For the
46 analysis by the Southeast Fisheries Science Center, are we using
47 the post-stratification data or the original stratified data? We
48 need to have a motion on that and then discussion. For Florida.

1 For Florida, we have the post-stratification analysis is
2 appropriate, but are we going to use it and not the stratified
3 data?
4
5 **MR. RINDONE:** Mr. Chair, I think the presumption, based on the
6 motion, is that the catch analysis that's put forward would use
7 that post-stratification for the State of Florida, and, at this
8 point, not for the other states.
9
10 **CHAIRMAN NANCE:** I realize that, but I'm saying for the analyses,
11 and the Center is going to run and provide us with OFL and ABC,
12 and are they not going to produce a value from Florida that is
13 based on the original stratification, and we're only going to see
14 values from the post-stratification analysis?
15
16 **MR. RINDONE:** Yes, sir, and I believe that's correct, and so, based
17 on the motion, you would not see a non-post-stratified analysis,
18 and so you would have an analysis post-stratified only for the
19 State of Florida that also includes the LGL estimate and an
20 analysis post-stratified only for the State of Florida that does
21 not include the LGL estimate.
22
23 **CHAIRMAN NANCE:** Okay. What I am trying to figure out is, because
24 we haven't decided on LGL in the analysis yet, and I thought that
25 we were going to sit here and go step-by-step, and so the Center
26 is going to provide us with an ABC, looking at what we're deciding
27 here, and is that -- I guess I'm -- Am I incorrect?
28
29 **MR. RINDONE:** I think, based on the discussions that you guys have
30 had, you have two analyses that you're going to be examining at
31 this point. You're going to have the two that I just mentioned,
32 as opposed to one.
33
34 If you made a decision, a firm decision, on whether or not to
35 include LGL, then the analysis that you would see would be post-
36 stratified for the State of Florida and including LGL or not, and
37 that would be the end of it, but, at this point, you've said that
38 you wanted to see one with and without, but, in order to thin the
39 herd on the other side of the options, you've had these motions
40 and discussions about the post-stratification analysis. At this
41 point, there are two versions of the catch analysis that you should
42 expect, both post-stratified for the State and Florida and one
43 which includes the LGL estimate and one which does not.
44
45 **CHAIRMAN NANCE:** Okay. Roy.
46
47 **DR. CRABTREE:** I mean, if you want to go ahead and make a decision
48 about the LGL number in Louisiana, I think we could do that. I

1 mean, intuitively, we know it's going to reduce the estimate by
2 eight million fish, roughly, and so it's going to give us a
3 somewhat lower ABC, but my sense, from the discussion earlier, is
4 that people are probably at a point where they would be willing to
5 say that's what we want to see, and that would probably reduce
6 what the Science Center has to go through and work on, and so I
7 think we probably could decide that. I agree that the motion seems
8 clear, to me, that we've made the decision on Florida to use the
9 post-stratified analysis.
10
11 **CHAIRMAN NANCE:** Let me ask this. Then we have an analysis run
12 that we've seen for the ninety-six million pounds, which is right
13 out without any changes, so we've got that one, and we also have
14 one that would then include those same values, but with a post-
15 stratification of Florida, and so you would have a little bit of
16 a reduction there, and we would see that one, also.
17
18 **DR. CRABTREE:** I don't think we have that one at this point, and
19 I think we have the post-stratification analysis for all the
20 states, but not one that just did it with Florida.
21
22 **CHAIRMAN NANCE:** Okay.
23
24 **DR. CRABTREE:** I mean, I can tell you where I am on this now, and
25 I think what I want to see the Center show us is I want to see the
26 catch analysis done with the post-stratification analysis for
27 Florida and using the LGL estimate for Louisiana. Then the
28 decision we have is either do we make an ABC recommendation based
29 on that or do we not, and we have that discussion and make a
30 decision.
31
32 **CHAIRMAN NANCE:** Okay. Trevor.
33
34 **MR. MONCRIEF:** My point isn't quite in line with the discussion,
35 and so if you want to kind of run through this, and I can make a
36 comment afterwards.
37
38 **CHAIRMAN NANCE:** I think you can go ahead and make it now.
39
40 **MR. MONCRIEF:** Okay. I was going to bring up, just on that last
41 motion, since it was so close across-the-board, and obviously there
42 was -- To me, there was valid points on both sides, and I just
43 wanted to make sure that that's -- I know Tom is there listening
44 to us, but that's transferred, when it comes down to the final bit
45 of it, since a lot of folks are going to be looking at the decisions
46 made today, just to make sure that everyone is aware that that was
47 a close discussion, and they should refer to the minutes if they
48 want to see all the discussion points.

1
2   **CHAIRMAN NANCE:** Yes, and I appreciate that. In the discussion
3   that I will provide for the council, these types of things, while
4   we have a real scientific debate on the issue, and, while the
5   motion failed, it certainly is ten to eleven and those types of
6   things, and so there are good, very valid opinions on both sides,
7   and so I think that's why we have these discussions, so we can be
8   able to look at those and make our recommendations. Let's go ahead
9   and take a ten-minute break, and we'll come back at 3:05 and renew
10 our discussion.
11
12 (Whereupon, a brief recess was taken.)
13
14 **CHAIRMAN NANCE:** Let's go ahead and reconvene. Looking at this
15 last motion, it's always difficult, from my perspective, to have
16 a motion that failed by one vote, two votes, those types of things.
17 If we could have just a little more dialogue, so we can kind of
18 finish this one out, and, Jim, could you give us a little more
19 rationale, Jim Tolan, from your perspective on post-stratification
20 of the Texas data and why, from a scientific standpoint, this is
21 not appropriate?
22
23 **DR. TOLAN:** Thank you, Mr. Chairman. To me, the biggest part has
24 to do with the total amount of the Texas coast that is this
25 unconsolidated bottom, and, yes, they're fish that were originally
26 counted up and said here's all the fish on the unconsolidated
27 bottom, and now we're going to split them into different zones
28 that we're going to post-stratify, and put some in one zone and
29 some in other zone, and I get it, and Katie brought up a couple of
30 different times that they're not zeroed-out, and there's not this
31 big zero of no fish there.
32
33 I just think, with the total original sample size, given the length
34 of coastline, and the problems with the visibility and the species
35 composition to identify that's a red snapper or that's not a red
36 snapper, it's just -- It's not applicable, like it is in Florida,
37 where you've got really clear water, and you have some independent
38 estimates of the video surveys that says there's just not all these
39 fish that we're assigning to this depth stratum that we can account
40 for, but the Stunz et al. paper came out and said there's all these
41 fish that are really there, and I just don't think the methodology
42 translates well into the Texas waters, given the confounding
43 factors we have of the visibility problems.
44
45 Then to take that really big level of uncertainty and multiply it
46 by the huge amount of the Texas coast, I just didn't think it was
47 appropriate, and so that's why I voted against this. Thank you.
48

94

1   **CHAIRMAN NANCE:** Okay. Thank you. Will.
2
3   **DR. PATTERSON:** I pass.
4
5   **CHAIRMAN NANCE:** David.
6
7   **DR. CHAGARIS:** I mean, I'm just following-up on Jim's point there,
8   and so what do we do with the original Red Snapper Count data? I
9   mean, those were all taken in the same waters, the same exact data,
10 the same exact samples, and I don't see how post-stratification
11 makes it any worse, with regard to visibility or extrapolation.
12 If anything, it might make it more accurate, if you're actually
13 putting fish in the right depth bins and you have more accurate
14 area estimates for those depth bins, and so I don't understand how
15 post-stratification makes the visibility issue get worse, and can
16 you explain that?
17
18 **DR. TOLAN:** Thank you, Dave, and I appreciate that. It's -- To
19 me, it has to do with the idea behind it, where there was another
20 estimate of here's where we think these fish are, and we've got
21 some pretty good data, up and down the Florida Shelf, that says
22 they're not there, but we're going to put them there, and, if there
23 is the same sorts of fish off of Texas, and we ping them with some
24 acoustic information -- Again, it doesn't change anything, and are
25 they really red snapper or not, and we really -- It's just not the
26 level of certainty that I am comfortable with to move forward with
27 this post-stratification, but I certainly can appreciate the
28 points you're raising. Thankyou.
29
30 **CHAIRMAN NANCE:** Thank you. Paul.
31
32 **DR. MICKLE:** I apologize for issues earlier, technical issues, and
33 it's really just a question for Jim, and this is just my ignorance
34 for the Texas coastline, and it's such an extensive coastline, and
35 what's the water quality like throughout the State of Texas? It's
36 toward post-strat, and so, once you justify post-stratification
37 techniques, why do you justify it by state?
38
39 There needs to be some sort of understanding of stratification by
40 depth or stratification by area, which it seems like we're almost
41 doing, because Florida is doing it one way, and post-strat another,
42 and so is there actually regions in Texas where water clarity
43 changes from north to south?
44
45 I know you mentioned a nepheloid layer, and, yes, the central Gulf
46 has that as well, but I don't understand, in Texas, how you can
47 make a statement across the entire state, when I don't know, and
48 maybe it is very homogeneous, as far as clarity throughout the

state and post-stratification zones, but I would like to ask, to
get some information toward just overall water clarity throughout
the state, and can you lean on a justification such as that, based
on this water clarity for the entire region?

DR. TOLAN: Thank you, Paul. To address that, there is a seasonal
component to it. For the most part, the surface layers, if you go
on a boat and go diving somewhere off of the Texas coast, the first
thirty feet or so, forty feet or so, it's beautiful water, and you
get down to the nepheloid layer, and you can't see a couple of
inches, and it's like that all up and down the entire coast.

It doesn't really go away, even here down in Corpus Christi, and,
during the major snapper season, you will get the nepheloid layer
that will push up along the beach, and it will be beautiful blue
water one day and it looks like chocolate milk the next day, and
so it's -- I just don't think the same conditions are appropriate
to apply this methodology, as they did off of Florida, in the
absence of some other independent data source, like they had for
video surveys.

If Greg Stunz is on the call still, I would love to open it up to
him, as the one that did the research itself, but I am just giving
you sort of anecdotal evidence, in terms of the nearshore Gulf,
but I would be more than happy to allow Greg to chime-in on this.
Thank you.

CHAIRMAN NANCE: Thank you, Jim. David.

DR. CHAGARIS: That was a mistake. I pass.

CHAIRMAN NANCE: Okay. Thank you. John.

DR. WALTER: Thank you, Mr. Chair. We brought up the idea of
looking at some other ancillary data, and our survey crew put
together some really nice maps of the distribution of red snapper
from our trawl and video and longline surveys, and I am wondering
if those would be useful for the group to see, because we did show
them for the Florida area, but not for Texas and the western Gulf,
and I don't know if that's something the group would want to see
here.

I know we've already -- There's already been -- The motion has
passed, but, Chair, you were looking for some further clarity as
to the decision process, and maybe they would help. I could show
them, and I would be more than willing to show them right now.

CHAIRMAN NANCE: Okay. I think that would be good to do. I'm

1 just trying to, from an SSC standpoint, and I know the council is
2 going to be interested in why we as scientists voted this no and
3 yes and that type of thing, and I'm just trying to give it a little
4 more scientific credibility on why we came to this decision, for
5 the rationale. Trevor and then, John, if you could pull that up.
6 I will do Trevor first, and then, John, you can show us those
7 results.
8
9 **DR. WALTER:** Okay.
10
11 **MR. MONCRIEF:** I will wait for John to go, but I was just going to
12 agree that I think whatever information he has to provide would be
13 very welcome, and I think that's my concern, is that Florida has
14 a preponderance of evidence that they presented, a lot of the
15 fishery-independent surveys to match the findings, and the
16 corresponding decision was made, and, to me, we're making the
17 assumption that the two states were operating completely the same,
18 and I think, if there's evidence of what John has, that it's a
19 similar situation to Florida, then that's what we're looking for
20 here, right, and we're looking for scientific evidence to support
21 the assumptions we're making, and so, by all means, I hope John
22 shows us something.
23
24 **CHAIRMAN NANCE:** Thank you, Trevor. Katie.
25
26 **DR. SIEGFRIED:** Thanks. While John is pulling that up, the plot
27 that I sent to Jessica right as the vote was happening is actually
28 in the PowerPoint that I presented at the last SSC meeting, and so
29 it's not new information, and we actually pulled this same plot
30 into that PowerPoint and then did it year-by-year, for the SSC to
31 take a look at it, and so, if you all want to pull this up on your
32 own screens, you'll be able to take a look at it over all years
33 and then year-by-year.
34
35 **CHAIRMAN NANCE:** Okay. Thank you.
36
37 **MR. BLANCHET:** Agenda item and document number might make it easier
38 for us to find.
39
40 **DR. SIEGFRIED:** Apologies, and I will find that right now.
41
42 **MR. BLANCHET:** Is that the 15(b)?
43
44 **DR. SIEGFRIED:** You're faster than me, and I'm sorry. I am still
45 waiting for my computer to load up the January meeting. It's in
46 the -- It's 14(a), and it is Slides 11 through -- For the
47 groundfish, it's 11 through 16, and then the bottom longline survey
48 is Slides 17 through 19. Would you like me to go through or John

1 to go through it? I'm happy for either, and I have it in the
2 PowerPoint or in what you're showing here on the screen.
3
4 **CHAIRMAN NANCE:** John or Katie, either one of you, and I trust
5 both of you.
6
7 **DR. SIEGFRIED:** Okay. What we're showing here is the groundfish
8 survey over the years -- John, what I had in my presentation was
9 2014 through 2019. If that's different, let me know, but what
10 we're showing here in the shallowest depth zone, which is the
11 lightest blue contour, we see a lot of sampling, all of the dark
12 sort of gray dots, and then any red dots and then the size of it
13 is scaled to the magnitude of catch per unit effort, and so we see
14 a lot of sampling in that shallow zone and not much catch.
15
16 This wouldn't be affected by any sort of water quality issue,
17 because we actually are able to see the fish once it's out of the
18 water, or not me personally, but our survey folks, and so this is
19 over all years.
20
21 Then Will Patterson had brought up a good point, that we needed to
22 look at this year-by-year, which is why it's listed year-by-year
23 in that other presentation, to see if perhaps there's some sort of
24 shift, or change, in that shallow-water zone, which we didn't see
25 when we plotted it year-by-year. Again, it's a bit awkward for
26 you to be looking at this after a motion fails, and so this is
27 just meant for informative purposes.
28
29 **CHAIRMAN NANCE:** Yes, and I appreciate that. Okay. Any other
30 discussion from the SSC on this particular issue? These are the
31 small fish, aren't they, Katie? The trawl survey?
32
33 **DR. SIEGFRIED:** They're the two-plus. The bottom longline is going
34 to be older fish.
35
36 **CHAIRMAN NANCE:** Okay. Thank you. Any other comments from the
37 SSC? Thank you. Ryan, could you bring up the different analyses
38 that we're going to ask for, just so -- I want to make sure that
39 we as an SSC are clear what we're asking for, so there is no -- I
40 don't want to have Wednesday come and we all think we're doing
41 something different.
42
43 **MR. RINDONE:** Let me save it and send it to Jessica.
44
45 **CHAIRMAN NANCE:** Okay. So Ryan is going to send that to Jessica,
46 and we'll put it up on the screen, so we are, as a body, comfortable
47 with what we're going to see, from an analysis standpoint, so that
48 if somebody says, well, I thought we were going to see this, and

1 that type of thing, and so we're all clear. We'll wait for a
2 minute, for Ryan to get that to Jessica, and Jessica will bring it
3 up.
4
5 **MR. RINDONE:** Coming in hot, Jess. Katie, can you tell us what
6 the terminal year of data is for the plot that's on the screen
7 right now?
8
9 **DR. SIEGFRIED:** The one that I showed last time was 2019, and, if
10 that's different, John can let us know, because he gave this to me
11 to share to Jessica in our chat window, but the one that I presented
12 was 2019.
13
14 **MR. RINDONE:** Okay.
15
16 **CHAIRMAN NANCE:** Jessica, go ahead and bring that document forward.
17 Ryan, can you take us through this, please?
18
19 **MR. RINDONE:** All right. Based on you all's motions and
20 discussions, what we're looking at here is two catch analyses,
21 both of which would be post-stratified for the State of Florida
22 only, and one of which would use the GRSC-informed data for
23 Louisiana and one which would use the LGL-informed data. Does
24 that make sense?
25
26 **CHAIRMAN NANCE:** Okay. That makes sense. Any issue with what
27 we're proposing that the Center run for our look on Wednesday and
28 Thursday at the two analyses, and so there's going to be two catch
29 analyses run that we'll have OFL and ABC data for. Doug.
30
31 **MR. GREGORY:** Thank you, Mr. Chair. I thought we had earlier
32 decided that we should be making these decisions upfront, and so
33 it seems, to me, that we need to make a decision on the LGL data
34 now and then ask the Center to run just one catch analysis.
35
36 **CHAIRMAN NANCE:** We could do that. Let me ask Carrie. The council
37 asked us to do a look at just the Great Red Snapper Count, and
38 does this -- If we do the LGL with and without, we have that, and,
39 if we do the LGL, does that have any issue? The way I was
40 understanding what the council was asking is they wanted to see
41 the Great Red Snapper Count and then a separate one too, if we
42 thought it was necessary.
43
44 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair. I don't think
45 we knew if it was going to be ready or not when the council made
46 that motion, and I think it was like right after the March 2021
47 meeting, and it was at the April meeting, I believe, and so it was
48 right after, and so I think they -- It also said something about

1 any other pieces of information, like the SEAMAP trawls we've
2 talked about, the bottom longline survey, and if the LDWF --
3
4 **CHAIRMAN NANCE:** Okay. I just wanted to be sure, for my own
5 perception. Okay. Thank you. Doug, we will go ahead, and I am
6 going to hear from Katie first, and, Doug, if you can think of a
7 motion while we're sitting here, I would like to entertain that.
8 Katie.
9
10 **DR. SIEGFRIED:** Thanks. Doug made my point for one of the things
11 that I was going to bring up. The other thing is, Ryan, and
12 whoever else made this, this is great, because it helps us narrow
13 that down. We do have to remember that each of these catch analysis
14 is not actually just one, and we have three different levels of
15 percent UCB that are requested within each assumption of a total
16 number, and so each time -- So Catch Analysis 1 will actually be
17 1a, 1b, and 1c, for all structure, all structure plus 10 percent,
18 and all structure plus 15 percent.
19
20 If we can narrow this down to whether you all think that the LGL-
21 informed Louisiana estimate is a better estimate of abundance,
22 then we can halve that, and it's not just half of two, but it's
23 going to have half of six. Thanks.
24
25 **CHAIRMAN NANCE:** I appreciate that. Yes. I appreciate you
26 bringing up the fact that there are three for each one.
27
28 **DR. SIEGFRIED:** Mr. Chair, one more thing?
29
30 **CHAIRMAN NANCE:** Yes, absolutely, Katie.
31
32 **DR. SIEGFRIED:** In Matt Smith's presentation that has already been
33 submitted and is on the website for today, or tomorrow, he has
34 already provided a catch analysis and the three levels of UCB using
35 96.7 million, the approximate final Great Red Snapper Count number,
36 as well as the full post-stratified across all states. Those are
37 already in the presentation and in your document.
38
39 We would like to know if you want those removed from the
40 presentation, and obviously you will still have it in the document,
41 but I'm not sure it's worth him going over tomorrow if those are
42 the wrong total estimates, but you do have them, and then the value
43 in us getting these catch analyses decided this afternoon is that
44 Matt can then provide you with -- When he presents tomorrow your
45 first best guess at what you want to set catch advice with, and
46 then it can be fine-tuned from there, and so we need to know if
47 you want all of that still in the presentation or if he can cull
48 it, for time.

1
2 I know we don't like to change the presentations once they're
3 submitted, and I hope that Ryan and others don't get too ticked
4 off at us, but this is a dynamic situation.
5
6 **MR. RINDONE:** No excuses.
7
8 **DR. SIEGFRIED:** Sorry.
9
10 **MR. RINDONE:** Thinking out loud, in terms of trying to continue to
11 thin the herd and hone-in on what you guys actually want to see,
12 and so it's like what Dr. Siegfried is talking about with having
13 the a, b, and c, the all structure, the all structure plus 10
14 percent UCB, and all structure plus 15 percent UCB, and there might
15 be some benefit to having some discussion around that, if there is
16 something that you generally aren't interested in looking at.
17
18 I think, at this point, we've probably fairly well established
19 that there is fishing effort that occurs off of what is
20 contemporarily considered known structure, and there is some
21 fishing that does occur in the UCB, and so, if that assumption is
22 something that you guys are comfortable leaning on, then maybe
23 that would be a scenario that you could eliminate, but, if you're
24 not comfortable eliminating it, then, obviously, we could keep it.
25 I am just trying to think of ways to reduce the number of things
26 that the Center has to run, and I don't know how you guys feel
27 about that.
28
29 I was just making the point that the all structure only, without
30 any inclusion of any of the UCB, is probably not an accurate
31 representation of fishing effort in the Gulf of Mexico, and so we
32 know that the technology exists for commercial and recreational
33 fishermen to touch any single part of the Gulf of Mexico between
34 Key West and Brownsville.
35
36 Whether or not they find anything to catch there is a different
37 story, but they can certainly access it, and, with advances in
38 sounding technology and fishing tactics and just information
39 that's made available to fishermen, like some of the mapping
40 software that can be input into people's units, and there is less
41 and less that is unknown, and so you only think that it's your
42 private fishing spot.
43
44 Just to that point, perhaps the all structure only, without any
45 consideration of UCB, is probably not representative of reality,
46 and so, if you guys wanted to consider eliminating that from
47 further consideration, based on your own justification, please
48 discuss, as opposed to just listening to me babble. That would

1 reduce the number of runs that the Science Center has to do as
2 well.
3
4 **CHAIRMAN NANCE:** Thank you. Harry.
5
6 **MR. BLANCHET:** It was actually to that point, and Ryan almost
7 talked me off of it, but the inevitable question is going to be,
8 well, why didn't you consider this scenario, the non-post-
9 stratified scenario, the whichever flavor of something that we
10 have rejected and why didn't you consider it, and so, if we're
11 going down this road of making selections now, and not even looking
12 at them in the presentation tomorrow, please be sure that we've
13 got good documentation of why those were done, because I can just
14 foresee this revisited yet one more time.
15
16 **CHAIRMAN NANCE:** Harry, thank you. Ryan, to that point?
17
18 **MR. RINDONE:** Thank you, Mr. Chair, and Mr. Blanchet hits the nail
19 on the head. Just as long as we have an established record as to
20 why certain decisions are made, I think that the SSC's decisions
21 are certainly defensible, and we have good justification, and,
22 between the verbatim minutes and the meeting summary, we'll make
23 sure to capture the discussions in the way that frames that
24 justification ahead of the motions.
25
26 **CHAIRMAN NANCE:** Trevor.
27
28 **MR. MONCRIEF:** Both Ryan and Harry covered my points.
29
30 **CHAIRMAN NANCE:** Katie.
31
32 **DR. SIEGFRIED:** Thank you, Mr. Chair. Just a quick clarification
33 to what I said before, and I didn't intend for you to cut out any
34 of the percent UCB runs at this point. You haven't seen any of
35 that, and you haven't had the chance to get the presentations, and
36 I was simply pointing out that it would be helpful to get a decision
37 on the science of the LGL study at this point, and that's actually
38 a pretty big lever in Matt's model at this point, and that would
39 be really helpful for the overnight work.
40
41 **CHAIRMAN NANCE:** Okay. Thank you. Will.
42
43 **DR. PATTERSON:** Thanks, Mr. Chair. It seems, to me, that we keep
44 having these discussions about various iterations and things to
45 consider or not consider, and I'm just wondering if we're kind of
46 getting caught up in issues about uncertainty.
47
48 I mean, Roy raised this really early in the process, when Scott

102

gave the LGL presentation and talked about precision versus other sources of uncertainty, and I just -- I am not sure that it's going to be really fruitful to have multiple runs of various scenarios here when, in the end, all of them are going to have uncertainty, some of which can be easily classified, given the CV estimates from the various analyses, and then other sources of uncertainty which are biases which we're aware of, and some of which we think might be there, but we're not really aware of.

Really, that gets to ABC from OFL and not just estimating OFL, and so I'm wondering if we're kind of getting caught up in some of that uncertainty, when we can deal with that once there is an estimate of OFL.

CHAIRMAN NANCE: I think there is a couple of different things, and I appreciate that, because, once we have an OFL, the ABC can be based on risk also, which is one of the things we're looking at, but I think it's that OFL that we're kind of struggling with, too. Doug.

MR. GREGORY: Yes, Mr. Chair. **As per your request, I drafted a motion and sent it to meetings, and so staff should have it, and I look at this as the draft of a consensus statement, if we can get that far, and so wordsmithing is appropriate.**

I am not the best at writing things out on the fly, but, with regard to the other discussion about all structure or not, it probably depends on where those categories originally came from. Were they recommended by the SSC, or was it something that staff and the Center staff, or council and Center staff and Regional Office staff, got together and specified, or was it something the council specified?

If it came straight from the council, then, yes, we don't have the flexibility to not look at it, but, if this is something that we've had in the past, numerous times in the past, where the plan development team or the Center, in trying to help further the SSC discussion, has put out options for us to look at, then it would be appropriate for us to choose what to look at and not to look at, and I don't think -- I think, contrary to what Harry was saying, I don't think we would be in trouble for not looking at something, because it wasn't a mandate, and we could just say we decided that that was not the appropriate direction to go in, and so I think we have the flexibility. Anyway, I agree with Katie that the LGL study comes first in this discussion.

CHAIRMAN NANCE: Okay. Thank you, Doug. Let me read the motion that Doug had proposed. **The SSC decided the LGL red snapper**

abundance study for Louisiana would be an improvement over using the Louisiana data in the Great Red Snapper study for conducting subsequent catch analyses. Do we have a second for this motion?

DR. TOLAN: Second, Mr. Chair.

CHAIRMAN NANCE: Thank you. Jim Tolan seconded that. It's open for discussion, please. Doug, any rationale?

MR. GREGORY: Rationale? Yes. For one, the LGL study is a directed study, whereas the Great Red Snapper Count had to deal with some difficulties beyond their control and did the best they can, but the use of data from Texas for Louisiana -- You know, it doesn't seem like the best way to go, when we've got a study that was focused on Louisiana, and designed for Louisiana, and so that's my rationale. It's just a matter of reducing that uncertainty and using the best available data we have before us, and that's the best way to look at it, is we've got two sets of data for Louisiana, and which one is the best. Thank you.

CHAIRMAN NANCE: Thank you, Doug. Other hands? Other discussion? Trevor, please.

MR. MONCRIEF: Thank you, Mr. Chair. I brought up a point earlier, and I just want to make sure -- I want to make sure that it's reiterated, and there is no possibility -- It's one or the other here, and there is no possibility of integration or anything else like that?

CHAIRMAN NANCE: I don't think, at this time, there would be that opportunity. Ryan.

MR. RINDONE: To that effect, and, Trevor, this might be something that could be explored as part of evaluating these data in SEDAR 74, and it's not part of the terms of reference, but it might be something that the data workshop and the assessment process could take up and poke at a little bit and see if there is a way to perhaps weight some combination of the estimates together to get some unified estimate of absolute abundance for Louisiana, to inform -- However that estimate for that point in time might scale towards adjustments for other indices of relative abundance or something to that effect. We don't know yet, and we don't really have any idea of how that might all play out, but it's probably better that an analysis like that happen as part of an effort like the SEDAR 74 assessment.

MR. MONCRIEF: All right, and I would agree there, but I just wanted to make sure, because we heard various points this morning

1   that all had equal merit, in my mind, and I would hate for us to
2   make a decision on one or the other in a quick timeframe, when
3   there could be some more information that we could work with later
4   on, and so I think, if it's taken up in the SEDAR process, I think
5   that would be a good choice for us.
6
7   **CHAIRMAN NANCE:** Thank you, Trevor. Roy.
8
9   **DR. CRABTREE:** I think, as we get through the full SEDAR process,
10 there will be opportunities to revisit all of these issues, but I
11 think, for now, based on what I heard this morning, I believe that
12 the reliance on the data from Louisiana persuades me, at least,
13 that the Louisiana LGL estimate is probably the more compelling of
14 the two estimates, and so I am going to support the motion.
15
16 **CHAIRMAN NANCE:** Thank you. Jim Tolan, please.
17
18 **DR. TOLAN:** Thank you, Mr. Chairman. Having been thrown into the
19 fire to defend the Texas motion, I am curious to see what Harry
20 thinks about this Louisiana motion, and so I'm going to throw him
21 under the bus right now, and so thank you, and I'm going to support
22 this motion, too.
23
24 **CHAIRMAN NANCE:** Thank you, Jim. I'm sorry you felt like we threw
25 you into the fire, but I do appreciate your opinion, for sure.
26
27 **DR. TOLAN:** I fully expected it, and it was specific to Texas, and
28 I'm here to represent the state, but I am curious to see what Harry
29 has to say about this one. Thank you.
30
31 **CHAIRMAN NANCE:** Sure. Thank you. Harry.
32
33 **MR. BLANCHET:** Jim, remind me about this later, and I will be glad
34 to reciprocate again.
35
36 **CHAIRMAN NANCE:** Is that Jim Tolan or Jim Nance?
37
38 **MR. BLANCHET:** Jim Tolan. Okay. Let me start off by saying that
39 I agree, and I think that both studies have information that really
40 should be looked at and perhaps combined to come up with a better
41 estimate than either of the individual, and I have been struggling
42 with how to get this most efficiently and effectively and morally
43 sound, because, as many people have said many times, the Great Red
44 Snapper Count is done and over, and all that money is gone, and
45 so, basically, folks are continuing to volunteer time on this, and
46 I'm sure that Benny, in the same way, and all of the LGL money has
47 been done with.
48

1 I don't know the best way to get this done, but I would hope that,
2 either as part of the data workshop or as part of an informal get
3 together prior to the data workshop, that the principals of the
4 two studies could sit down with appropriate experts, because I
5 don't know if Benny is the expert in acoustic calculations that
6 somebody else is, and so the right people in the room to get the
7 best set of information and come up with some numbers that are
8 appropriate.
9
10 I don't know which would come out the closer, but I think that it
11 would end up with basically being somewhere between the two, and,
12 personally, I am pretty comfortable with a lot of the LGL numbers,
13 and I have scratched my head over a couple of them, but that's
14 nothing unusual to me, and I do it all the time. I would support
15 the motion, but I just gave you all the caveats to that.
16
17 **CHAIRMAN NANCE:** Thank you, Harry. Any other discussion? Okay.
18 We will go ahead and take this to a vote. Let me read the motion,
19 and we'll do probably a roll call vote, Jessica.
20
21 **The motion is the SSC decided the LGL red snapper abundance study**
22 **for Louisiana would be an improvement over using the Louisiana**
23 **data in the Great Red Snapper Count study for conducting subsequent**
24 **catch analyses.** I will ask. **Is there any opposition to this**
25 **motion?**
26
27 **DR. POWERS:** Jim, I am going to abstain.
28
29 **CHAIRMAN NANCE:** Okay.
30
31 **DR. PATTERSON:** I abstain as well, Jim.
32
33 **CHAIRMAN NANCE:** Okay.
34
35 **DR. ANDERSON:** I abstain as well.
36
37 **DR. GALLAWAY:** Of course, I abstain, too.
38
39 **DR. SCYPHERS:** I abstain, also.
40
41 **MR. RINDONE:** I think, Jess, go ahead and --
42
43 **CHAIRMAN NANCE:** Let's go ahead and -- Just so we're good.
44
45 **MS. MATOS:** Steven Saul.
46
47 **DR. SAUL:** Yes.
48

1   **MS. MATOS:** Jack Isaacs.
 2
 3   **DR. ISAACS:** Yes.
 4
 5   **MS. MATOS:** John Mareska.
 6
 7   **MR. MARESKA:** Yes.
 8
 9   **MS. MATOS:** Lee Anderson. Abstain. David Chagaris.
10
11   **DR. CHAGARIS:** Yes.
12
13   **MS. MATOS:** Doug Gregory.
14
15   **MR. GREGORY:** Yes.
16
17   **MS. MATOS:** Trevor Moncrief.
18
19   **MR. MONCRIEF:** Yes.
20
21   **MS. MATOS:** Sean Powers.
22
23   **DR. POWERS:** Abstain.
24
25   **MS. MATOS:** Jim Tolan.
26
27   **DR. TOLAN:** Yes.
28
29   **MS. MATOS:** Richard Woodward.
30
31   **DR. WOODWARD:** I will abstain, too.
32
33   **MS. MATOS:** Will Patterson.
34
35   **DR. PATTERSON:** Abstain.
36
37   **MS. MATOS:** Paul Mickle.
38
39   **DR. MICKLE:** Yes.
40
41   **MS. MATOS:** Benny.
42
43   **DR. GALLAWAY:** Abstain.
44
45   **MS. MATOS:** Harry Blanchet.
46
47   **MR. BLANCHET:** Yes.
48

1   **MS. MATOS:** Jason Adriance.
 2
 3   **JASON ADRIANCE:** Yes.
 4
 5   **MS. MATOS:** Luke Fairbanks.
 6
 7   **DR. FAIRBANKS:** Yes.
 8
 9   **MS. MATOS:** Mandy Karnauskas.
10
11   **DR. KARNAUSKAS:** Yes.
12
13   **MS. MATOS:** Steven Scyphers.
14
15   **DR. SCYPHERS:** I abstain.
16
17   **MS. MATOS:** Jim Nance.
18
19   **CHAIRMAN NANCE:** Yes.
20
21   **MS. MATOS:** David Griffith.
22
23   **DR. GRIFFITH:** Yes.
24
25   **MS. MATOS:** Roy Crabtree.
26
27   **DR. CRABTREE:** Yes.
28
29   **MS. MATOS:** Luiz Barbieri.
30
31   **DR. BARBIERI:** Yes.
32
33   **MS. MATOS:** Michael Allen.
34
35   **DR. ALLEN:** Yes.
36
37   **MS. MATOS:** Cindy Grace-McCaskey.
38
39   **DR. GRACE-MCCASKEY:** Yes.
40
41   **MS. MATOS:** Josh Kilborn.
42
43   **MR. RINDONE:** Absent.
44
45   **MS. MATOS:** Thank you.
46
47   **CHAIRMAN NANCE:** Go ahead, and what is the -- **The motion carried.**
48   Okay. Thank you. I think, from a discussion standpoint, I think

1 SEDAR 74 is certainly an opportunity for us to look at these two
2 datasets and come to agreement on some of the different things.
3
4 Without any further discussion on this, let's go ahead and move to
5 Item Number VII, Review of the Gulf Red Snapper Interim Analysis
6 Health Check.
7
8 **MR. RINDONE:** Red grouper.
9
10 **CHAIRMAN NANCE:** Red grouper. I've got snapper on my brain, don't
11 I? Red grouper. Gulf of Mexico red grouper interim analysis.
12
13   **REVIEW: GULF OF MEXICO RED GROUPER INTERIM ANALYSIS: HEALTH**
14   **CHECK**
15
16 **MR. RINDONE:** Katie is going to enthrall you once more with another
17 red-colored fish, the grouper, with the 2022 red grouper interim
18 analysis using data through 2021. We're looking at this as a
19 health check for the red grouper stock, since the red grouper ACL
20 was just recently updated, and the catch limits were reduced,
21 following the SEDAR 61 stock assessment, from where they were set
22 after the SEDAR 42 stock assessment.
23
24 Red grouper is known to have some susceptibility to red tide, and
25 so, as a function of that, the SSC has requested annual looks at
26 the stock, via this interim analysis process, and so we're looking
27 at it this time, again, as a health check, since the ACL was just
28 recently changed based on the last one, and that ACL change has
29 not yet been implemented.
30
31 Insofar as it relates to this health check though, you guys should
32 consider the information that is presented and provide any relevant
33 feedback to the council about your thoughts about the health of
34 the Gulf red grouper stock. Mr. Chair.
35
36 **CHAIRMAN NANCE:** Thank you, Ryan. Roy.
37
38 **DR. CRABTREE:** I take it, from that, that the expectation is we
39 are not going to give ABC advice, right?
40
41 **MR. RINDONE:** That is correct.
42
43 **CHAIRMAN NANCE:** Yes, and we want to provide feedback, if any, to
44 the council on this health check. With that, Dr. Siegfried, we're
45 ready for your presentation.
46
47 **DR. SIEGFRIED:** Okay. Thank you, Mr. Chair, and, of course, this
48 is all Skyler, and you know contentious she is, and so she probably

1 heard her name somewhere and is worried that it's not getting
2 presented, but I am here to do my best.
3
4 **CHAIRMAN NANCE:** We'll tell her that you did great, and you always
5 do anyway, Katie, and so you're fine.
6
7 **DR. SIEGFRIED:** Skyler is pretty special though, and so I will
8 try. Okay. Last year's interim analysis was implemented by Skyler
9 using an index-based harvest control rule, similar to the approach
10 that has been used for gray triggerfish and red snapper, before
11 the Great Red Snapper Count was available.
12
13 The method compares the average abundance from the most recent
14 three years to the average abundance during the reference years
15 for the bottom longline index, which covers prime adult habitat
16 for this species.
17
18 Because of concerns over the 2020 spatial domain covered by the
19 survey, the 2021 interim analysis used a bottom longline index
20 that was based on a reduced area index, and I actually alluded to
21 this earlier, when we were talking about bottom longline use, I
22 believe, for yellowedge.
23
24 The spatial domain was consistent across the years, and we wanted
25 to make sure that the reduced area that was sampled in 2020 was
26 then carried back in time for a look-see at the index results.
27 The results of the 2021 interim then are being considered in a
28 framework action, and there's been a lot of work by a lot of folks,
29 and a lot of you there in the room are very familiar with this,
30 but the implementation is dependent upon the implementation of the
31 Amendment 53, which is still not finalized.
32
33 This year's interim analysis is more along the lines of a health
34 check, as Ryan and others have stated, as opposed to developing
35 catch advice, and now we're not providing any ABC, which we
36 anticipate only providing every other year, and we are in
37 communication with council staff as to the expectations before the
38 SSC meetings, and we're not just sort of shooting from the hip,
39 and we're wanting to make sure we're providing what is needed at
40 the time.
41
42 For red grouper, we updated the indices of abundance, or, actually,
43 Adam Pollack did, and we have the bottom longline survey available,
44 which is the index used in the interim analysis, as well as the
45 summer groundfish survey, which collects the younger red grouper,
46 at the request of the SSC.
47
48 The video survey takes longer to process, because it combines three

1 different surveys, and it requires time for reading those videos,
2 and the FWRI repetitive time drop survey is no longer operational,
3 as of 2019.
4
5 This year, we have updated, or Adam has updated, the bottom
6 longline survey for the entire spatial area for red grouper, rather
7 than having a reduced area. While there were concerns that the
8 2020 index value may not be reliable, potentially, for management,
9 due to that reduced spatial coverage of the survey, the relative
10 abundance in 2021 was highest among recent years, and just below
11 the time series average, as you can see what's plotted on the
12 horizontal axis.
13
14 On the next slide, we have this updated summer groundfish index,
15 and it was not conducted in 2020, and we have this available, and
16 it serves as an indicator of younger grouper, the relative
17 abundance of younger red grouper, and the 2021 value is just above
18 the time series mean here, as opposed to just below it, and it's
19 much higher than the values for 2018 and 2019, and so, for a health
20 check, this is showing you that the younger red grouper relative
21 abundance has increased this most recent year, and that's a good
22 sign.
23
24 Although the summer groundfish survey ran into sampling issues in
25 2021 and did not sample above the Tampa region, an index developed
26 using the reduced spatial area also showed a similar increase in
27 relative abundance, suggesting that higher abundance was not an
28 artifact of the survey coverage, and so what Sky has for you here
29 is the 2017 and 2018 across the top row and 2019 and 2021, and so
30 we did have still some reduced coverage, and so 2021 is the bottom-
31 right, and it's just to show you a visual of the reduced coverage
32 for that groundfish survey.
33
34 The summary here for you is that both indices appear to show
35 positive trends in relative abundance for red grouper in 2021,
36 which is good news, although it should be noted that these surveys
37 sampled before the peak of the red tide season is -- The 2021 red
38 tide may have reduced abundance, and we may not have that signal
39 in that 2021 year, and so I would take the positive note with a
40 small grain of salt there, and then I think the next slide is just
41 asking if you have any questions.
42
43 **CHAIRMAN NANCE:** If you do, you can email Skyler.
44
45 **DR. SIEGFRIED:** You can ask me, and I can try to answer, but it is
46 just supposed to be a health check, and so hopefully there's not
47 too much concern over what's been presented.
48

1   **CHAIRMAN NANCE:** You're fine, Katie, and I'm glad that you're
2   letting me kid with you. Any questions for Katie on this
3   presentation? David.
4
5   **DR. GRIFFITH:** Thank you, Mr. Chairman. I see, on Slide 7, you
6   have -- It says that it matches observations by fishermen on the
7   water, and was that a systematic survey or anything that was done,
8   or is it just anecdotal evidence or what, and I'm just curious.
9   Thanks.
10
11 **DR. SIEGFRIED:** Sure, and it's anecdotal, as far as I know, and
12 maybe one of the council staff could let us know if there's
13 something in Something's Fishy, and I think Mandy had to hop off,
14 and she had done the actual interviews with fishermen, but this is
15 something that Sky has been hearing from the IPT and that we've
16 heard from fishermen directly, but, no, it's not a sampling design
17 or any sort of official formal estimate.
18
19 **CHAIRMAN NANCE:** Thank you. Ryan.
20
21 **MR. RINDONE:** Thank you, Mr. Chair. To that effect, to Dr.
22 Griffith, we heard lots of testimony from folks at the council
23 meetings, towards the end of the year, that red grouper fishing
24 was just doing much better than it has in recent years, and both
25 the commercial and recreational fishermen were reporting increases
26 in landings and interactions in general, and also, having gone out
27 there, I can attest it's certainly better than I remembered it in
28 recent years, and so all good signs, and it's good to see the
29 observations of the fishermen and the surveys are all lining up on
30 this, and it's good to see that the stock seems to be doing better.
31
32 **CHAIRMAN NANCE:** I think it -- As Katie has pointed out, both the
33 bottom longline index and the summer groundfish index are sampling
34 different stages of the population, and both have seen an increase
35 in 2021, and so I think it's very positive for red grouper. Any
36 other issues or comments? Okay. Katie, thank you. We appreciate
37 your presentation.
38
39 **DR. SIEGFRIED:** Thank you, Mr. Chair.
40
41 **CHAIRMAN NANCE:** We'll have you do it each time. There doesn't
42 seem to be as many questions with you doing it. They're scared of
43 you, I guess. Okay. Let's see. It looks like we are through IX,
44 and we'll go ahead and have Item Number X, which is our public
45 comment section for today, and we'll do this each day, so it gives
46 everyone an opportunity to express their opinions. If we have
47 anybody that would like to provide public comment, please let
48 Jessica know, by raising your hand, and we'll be able to entertain

1 that at this time. Come on up, young man.
2
3   **PUBLIC COMMENT**
4
5 **MR. ERIC SCHMIDT:** Good afternoon, gentlemen. I will reiterate
6 also what I -- Eric Schmidt from Fort Myers, Florida. From what
7 everyone has commented at past council meetings, for the last two
8 years, the red grouper fishery has been exceptional, and I am doing
9 a lot of day charters right now, and what I am seeing, near-
10 coastal, to Boca Grande to off of Naples, a lot of your year-
11 class-two and year-class-three fish are moving through the
12 fishery.
13
14 There is days that we're catching seventy-five to 125 juvenile
15 fish, and so I think, within a couple of years, if the price of
16 fuel isn't $17.00 a gallon, we ought to be able to have a really
17 solid fishery. Now, the price of fuel is another reason, and I've
18 heard some rumors that there's a possibility that red grouper might
19 close again this year, and hearing that it might close as early as
20 August.
21
22 Now, I understand the agency, and not the council, but the agency
23 is responsible for the closing of this, and I know there's a lag
24 time in the waves of recreational landings and the data that's
25 going to be collected from the charter boats, and I hope that we're
26 not going to predetermine exactly when there is going to be a
27 closure, because, if the price of fuel does get to $5.00 and $6.00
28 a gallon, there's not going to be very many people fishing.
29
30 I can tell you that I'm probably not going to be one of them,
31 because I will be put out of work, because we're not going to find
32 anybody that wants to pay what we're going to have to charge in
33 order to take them fishing, and so, before the agency does a knee-
34 jerk reaction to close the fishery, I hope they take a serious
35 look at exactly economically what is happening our fishery, and
36 that's pretty much it.
37
38 **CHAIRMAN NANCE:** Thank you, Eric. Any questions from the SSC for
39 Eric? Eric, Harry has a question for you, if you don't mind.
40
41 **MR. BLANCHET:** The most similar situation to what we have currently
42 was in 2008, and I recognize that 2008 was -- Yes, there was a
43 housing crisis going on too.
44
45 **MR. SCHMIDT:** The price of fuel went up.
46
47 **MR. BLANCHET:** Exactly, and that's what I am talking about, really,
48 is that we had some extraordinarily high prices of fuel, and,

1 considering the inflation we've had since -- What is that, fourteen
2 years ago? $4.00 back then was a lot more than $4.00 today, but,
3 as you say, it's not $4.00 anymore, and it's climbing rapidly.
4
5 **MR. SCHMIDT:** A dollar in the last two weeks.
6
7 **MR. BLANCHET:** What kind of impact did you see in 2008 with your
8 business at that point?
9
10 **MR. SCHMIDT:** Well, when the housing market collapsed, so did the
11 economy. Where I live in southwest Florida, we're basically a
12 tourist destination, and most of our businesses are related to
13 real estate and construction, and so, when the housing boom hit,
14 southwest Florida took a massive financial hit, and, yes, we were
15 pretty devastated, economically.
16
17 The other thing -- Not just on the charter side of it, but the
18 other thing that you have to look at in what is happening this
19 year is, because of the Amendment 53 and the possible reallocation
20 of red grouper, there was a reduction in the commercial side, and
21 I'm sure that the council, at the next meeting, is going to hear
22 plenty about this, but the lease prices for red grouper have gone
23 through the roof.
24
25 Three years ago, I was leasing red grouper for fifteen-cents a
26 pound, and, last year, I leased it for seventy-cents. Today, this
27 year, I am not leasing any of it, because it's $3.25, and that's
28 only if you can find it, and so add the $3.25, and add the cost
29 recovery fee, and add the cost of the fuel that's gone up, and the
30 bait, and the groceries, and go commercial fishing, and I'm
31 basically making what I made twenty-five years ago, and that $2.75
32 went a further way twenty-five years ago than it does today.
33
34 **CHAIRMAN NANCE:** Thank you, Harry. Trevor.
35
36 **MR. MONCRIEF:** I really appreciate Mr. Schmidt's comments here,
37 and I think it really hits the nail on the head, when it comes to
38 gas prices and us looking forward over the next couple of years
39 and examining the impacts of these kinds of economic factors on
40 how we're going to see our fisheries respond.
41
42 We definitely see it on the red snapper side here, but I also
43 wanted to bring to you all's attention that the economic form
44 that's tied to the MRIP is also being -- This is the year that it
45 is being put out, and so this an every so often addition to the
46 MRIP survey, and so we're going to have information on the economic
47 side, as far as how much is spent by anglers and stuff, and this
48 year is certainly going to be -- It's been an asterisk so far, and

1   I think it's going to be moving forward, but, Mr. Schmidt, I
2   appreciate you stepping up and providing your comment today.
3
4   **CHAIRMAN NANCE:** Thank you, Trevor. Ryan.
5
6   **MR. RINDONE:** Thank you, Mr. Chair, and thank you, Captain Schmidt.
7   I am blazing a trail right now through different species that can
8   be caught from shore in the Gulf on the NOAA S&T website for
9   recreational landings data, and it definitely looks like there is
10 a bump, and this is qualitative, and this isn't a statistical
11 analysis, obviously, but it definitely looks like there's an
12 increase in 2008 for the shore mode for species like gray snapper
13 and cobia and a couple of others.
14
15 I am just curious if you observed like a spike in people fishing
16 from shore around that time, and I worked for FWC's Division of
17 Marine Fisheries Management during that time, traveling the state
18 and doing a whole bunch of different shows and fishing clinics and
19 things like that, and I definitely felt like it was crowded on
20 state fishing piers and things like that, to a degree that I had
21 not seen, and I was just curious about your observation.
22
23 **MR. SCHMIDT:** Sure, and that's because a lot of people had their
24 boats repossessed, and a lot of people had to sell their boats,
25 and I think you will see -- When the data works its way out, I
26 think you're going to see a similar bump in 2020 with COVID, and
27 people went to the beach to go fishing, and they didn't go charter
28 fishing.
29
30 They kind of stayed close to home, and so, yes, that happened, and
31 there were a lot of people that lost a lot of things. I mean, I
32 know people that had houses repossessed, and they bought houses on
33 speculation, and they had all the toys and bells and whistles,
34 but, when the economy hit the skids, everything went up for sale,
35 and so, yes, I think there was a decrease in effort, especially in
36 the offshore fishing.
37
38 **CHAIRMAN NANCE:** Ryan, to that point?
39
40 **MR. RINDONE:** Thank you. To that effect, and I guess looking at
41 Katie, when we're talking about -- I think we have a topical
42 working group explicitly for looking at the shore mode for
43 recreational landings for gray snapper, and maybe this would be
44 something just to keep in the backs of our minds as we're
45 evaluating those landings data, especially around 2008, I guess to
46 give some consideration to any increase in recreational landings
47 that we observe around that time, and maybe a spike around then is
48 probably appropriate in this case, but a measured spike, to be

1 certain.
2
3 **CHAIRMAN NANCE:** Thank you. Eric, thank you very much. Bob Zales,
4 please.
5
6 **MR. BOB ZALES, II:** Thank you, all. I caught most of the meeting
7 today, and I was in my engine room doing work for some of it, and
8 so I missed that. Anyway, it sounds like we're making some pretty
9 reasonable progress, and I can echo pretty much what Eric has had
10 to say.
11
12 Clearly, when it comes to the commercial side, especially on red
13 grouper, when you're looking at 53, and people are looking at the
14 proposed impacts and stuff like that, and 53 is impacting people
15 already. The fishermen have slowed down, on purpose, to keep from
16 trying to have this fishery shut down early, so they can try to
17 stretch it out, and, now that fuel prices have gone through the
18 roof, that has added another caveat to the whole thing, like Eric
19 said.
20
21 I mean, I just passed a station, and diesel is $4.90 a gallon here
22 in Panama City, and gasoline is $4.50, and they are projecting
23 even more than that coming up, and so, back in January, I had the
24 best January -- My family has been in business for fifty-seven
25 years, and I had the best January for booking trips for the snapper
26 season that I have ever had this past January.
27
28 Two or three weeks ago, when all this trouble started happening
29 overseas, and fuel prices speculation and the whole bit, and the
30 phone calls have stopped. I haven't received a call now in a
31 couple of weeks, because people clearly, who had plans, are
32 hopefully going to keep them, but people that are now planning are
33 going to hold back, because it's going to be difficult to travel
34 when you're looking at the possibility of $6.00 or $7.00 a gallon
35 gasoline and $5.00 or $6.00 or $7.00 a gallon diesel, and how long
36 that will last is anybody's guess.
37
38 All that plays into all of this, and you all have socioeconomic
39 people on your panel, and those kind of impacts are significant
40 when you're dealing with trying to determine what you're going to
41 do and what you're going to recommend of how a fishery is going to
42 be prosecuted.
43
44 The tourism market, especially in Florida, is dependent a lot on
45 the world's best fishing, which is what Florida is known for, and
46 so, whenever you get these situations to where it's costing all
47 this extra money to get down here, and you've got these people
48 last year that went crazy and bought all these four and five and

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1 six-engine outboard fifty-foot boats, and I don't know if those
2 sales have slowed down or not, but I suspect they're going to be
3 thinking twice about running a hundred miles to go catch fish when
4 they're paying $5.00 or $6.00 or $7.00 a gallon on fuel.
5
6 You have other stuff here, and there's a local restaurant here in
7 town that I was at about two weeks ago, and Eric's information on
8 the lease price and whatnot is on target, and he was asking me
9 about all this stuff, and he said that, where he's buying red
10 grouper, that they jacked his price up to $25.00 a pound. He said
11 that he's taken grouper off his menu, and he's not going to try to
12 charge people $35.00 or $40.00 or $50.00 a meal for grouper, and
13 so that's just one restaurant that just is impacted already.
14
15 All of this will play -- Hopefully this thing overseas will end
16 fairly quickly, and it doesn't look like it, but, if things
17 continue down this road, we're going to have a tough season, and
18 we were looking forward to one that was going to be hopefully
19 almost as good as last year, if not as good as last year.
20
21 **CHAIRMAN NANCE:** Thank you, Bob. Any questions from the SSC
22 members? Okay. Thank you, Bob, and it's always good to hear from
23 you. Eric Brazer, please.
24
25 **MR. ERIC BRAZER:** Thank you very much. This is Eric Brazer, Deputy
26 Director of the Gulf of Mexico Reef Fish Shareholders Alliance.
27 Thank you, guys, for the chance to weigh-in during the meeting. I
28 wanted to hit on a few things.
29
30 We're really glad to see the positive results of the red grouper
31 health check. It gives us a little bit of optimism for the future,
32 and I think we can take all the optimism that we can get these
33 days, and, as you heard, it does match what the fishermen are
34 seeing on the water.
35
36 We do hope that there is some additional work being done here to
37 tease this out a bit more, because, beyond fisherman observations,
38 you can start to look into CPUE data and the trip tickets and the
39 observer reports that should validate these observations on the
40 water.
41
42 Real quick, I want to back what Captain Schmidt and Captain Zales
43 said about the Amendment 53 impacts, and the IFQ portal is a great
44 resource for you guys, and it's one of the only real-time data
45 systems we have in place, and so you can see exactly what the
46 economic impacts of Amendment 53 are, right here, right now, today,
47 prior to it being implemented, and this is a rare opportunity to
48 look into the future and see the impacts as they're being realized

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1 now.
2
3 I know you guys aren't talking about gag today, but I wanted to
4 flag gag grouper, because, similar to red grouper, there are some
5 fishermen that are starting to see a little bit of an uptick in
6 gag, relative to what they saw last year.
7
8 Given the dire status of the stock, in my opinion, it would see
9 like we need regular interim analyses, not just to take a health
10 check, but to be able to respond quickly and appropriately with
11 management, and I think that, if we had mechanisms in place to
12 track this in real time and respond quickly, you may see some
13 fishermen that are less opposed -- Maybe not support, but less
14 opposed to some of the larger options for quota cuts coming down
15 the road. They don't want to see what happened in red grouper,
16 where you take the cut as the stock is coming up, and then the
17 quotas are coming up as the stock is coming down, and nobody wants
18 to get back to that point.
19
20 Then, finally, an SSC member asked earlier about industry
21 observations of red snapper on the water, and I can say that I am
22 hearing, from more and more of my membership, that effort is up
23 relative to landings, and a number of these guys are having to
24 fish a little harder and go a little further, especially after the
25 recreational season is open, to catch the same amount of fish that
26 they did even just a year or two ago.
27
28 A year or two ago, we were just hearing this in the northern Gulf,
29 and now I'm hearing fishermen in southwest Florida say this, and
30 also some of the guys in Texas, and I think there was even a
31 commercial fisherman, at the last council meeting, and Ryan could
32 probably confirm or deny this, that submitted some of his own data,
33 and he worked up some of his data and submitted it as part of his
34 testimony, and so that comment could probably be pulled and
35 provided to you guys.
36
37 Again, I really appreciate you guys asking for industry
38 observations and taking them really seriously, and a great shoutout
39 to Mandy and others who are doing this really good work, and so
40 thank you, guys.
41
42 **CHAIRMAN NANCE:** Thank you for those comments. Any comments from
43 the SSC or any questions? Eric, thank you. We appreciate your
44 comments today.
45
46 **MR. BRAZER:** Great. Thank you.
47
48 **CHAIRMAN NANCE:** Michael Drexler, please.

1
2 **MR. MICHAEL DREXLER:** Good afternoon, everyone. Thank you, Mr.
3 Chair. My name is Michael Drexler with Ocean Conservancy. I
4 wanted to commend all of the work that has been done by the Science
5 Center and the SSC and the Great Red Snapper Count researchers to
6 turn this huge body of work into management advice.
7
8 The improvements that you've adopted are significant and a real
9 improvement, as we saw today. However, there is still lots of
10 work to do regarding the integration and reconciliation of standing
11 data, and I believe the best place to do this is through the SEDAR
12 process, for full integration.
13
14 Interim advice should follow the methods of other assessments and
15 treated as either a health check on the stock or an update, based
16 on the most influential index of abundance, and I just wanted to
17 reiterate what I see as the choice the SSC is making this week, as
18 it's easy to get lost in the technical details of the various
19 methods being used to generate catch advice through this interim
20 analysis, and it may become seemingly inevitable that this body of
21 work should be adopted as BSIA, but I don't think that should
22 necessarily be the assumption.
23
24 Looking back in history, the total dead fish for the red snapper
25 fishery has never exceeded sixteen million pounds, as estimated in
26 SEDAR 52 and presented at the April 2021 SSC meeting. We should
27 revisit that plot in this meeting, for reference, and it was
28 impactful to me.
29
30 The last time the stock was fished at these levels, the estimated
31 SPR was driven down to 3 percent, and these new fish discovered in
32 the UCB are not new, and those fish have always been there, and,
33 while this information introduces new questions regarding how
34 precipitous that decline was for the stock health, we know, more
35 importantly, that the fishery suffered tremendously as a result of
36 fishing at sixteen million pounds of dead fish.
37
38 The consideration of quotas as high as twenty or twenty-five
39 million pounds would increase landed fish to levels way beyond
40 anything the stock has experienced, and those earlier landings do
41 not include -- These quotas would not include other sources of
42 mortality, and so the amount of dead fish would be even higher.
43
44 Lastly, any modifications to the red snapper ABC need to be able
45 to demonstrate the rebuilding plan is on track to rebuild the stock
46 by 2032 and ensure that overfishing is not occurring.
47
48 I can't grasp, or understand, how you can report on the status of

1 red snapper if you adopt these interim analyses, from a practical
2 point of view, and I've been trying to wrap my head around that,
3 and it's unlikely to be compliant with the MSA requirement.
4 Furthermore, given the lack of common currency to track red snapper
5 landings across all the states, compliance with ACLs, to prevent
6 overfishing, has been an intractable issue, further complicating
7 status determination criteria in non-assessment years.
8
9 Raising these quotas based on an expedited interim assessment,
10 coupled with declining trends in the east, a potential quagmire of
11 MSA compliance, and still unresolved fundamental issues to
12 generate the point estimate -- I don't believe, at this current
13 stage, is the best available science for management. There isn't
14 evidence the stock has increased in abundance to this degree, or
15 can sustain an increase of that magnitude, and, in fact, there is
16 decades of evidence and trends that it can't.
17
18 In closing, I would ask you to weigh the use of historical trends
19 and perspectives against the Great-Red-Snapper-Count-informed
20 interim analysis when you make your ABC recommendations. Thank
21 you.
22
23 **CHAIRMAN NANCE:** Thank you very much for those comments. Are there
24 comments or discussion or questions by the SSC? I don't see any.
25 Michael, thank you for those comments. We appreciate them. We
26 will go ahead and close now and come back tomorrow at 9:00 Eastern
27 Time, and we will start with Item Number XI, Characterizing Fleet
28 Behavior Using an Analysis of Vessel Monitoring Service Data. I'm
29 sorry, Doug.
30
31 **MR. GREGORY:** No need to apologize. I jumped in at the last
32 minute, when you were trying to close the meeting, and I apologize,
33 and I see that Katie after me, and this is a question that I have
34 for the Science Center.
35
36 The interim analysis approach, excluding this red snapper one, is
37 -- It has been presented to us and used to make changes to ABC,
38 and I would like the Center, and not today, but at some future
39 point, to explain to us why use it to change ABC, rather than OFL,
40 and I have raised this in the past meeting, and I think Will did
41 at one meeting, that it kind of short-circuits our regular approach
42 of setting an ABC based on the uncertainty we have about the OFL
43 estimate, and so I just wanted to know why the interim assessment
44 is not giving us OFL, but rather is giving us ABC, and any time
45 this year is fine. Thank you.
46
47 **CHAIRMAN NANCE:** Thank you, Doug. It's something we certainly
48 will look at for a future meeting, for sure. Katie.

1
2 **DR. SIEGFRIED:** Thanks. We will prepare something for you, Doug,
3 in the not-too-distant future. I just wanted to follow-up, before
4 we ended the meeting, and I messaged with Ryan, to see if we could
5 make sure that I have the correct specs for the run, or runs, that
6 Matt is doing, and he sent me the spreadsheet, but I thought that
7 the motion stated that LGL should replace Louisiana for -- I guess
8 I'm not sure why we still have two catch analyses.
9
10 **MR. RINDONE:** No, you're right, Katie, and you can just delete the
11 other one. You said to send the file, and I'm trying to multitask
12 in too many directions, and I didn't delete the other one, and so
13 you're correct, and so you should be doing a catch analysis that
14 includes post-stratification only for the State of Florida and
15 substitutes the LGL estimate of absolute abundance for Louisiana.
16
17 **DR. SIEGFRIED:** Okay. Is it also worth producing the 75 percent
18 fishing mortality runs for the SSC, which we produced that for --
19 It's in the document that Matt provided, and the presentation, but
20 we're just not sure how complete to make the package of things
21 that we show you tomorrow, and do you want the F SPR 26 percent
22 and 75 percent, everything that he's provided, or just the three
23 percentage --
24
25 **MR. RINDONE:** Sure. I think 75 percent is appropriate, given our
26 current sentiments about the ABC Control Rule and its performance
27 and being able to properly represent the scientific uncertainty
28 that is inherent in these analyses and in the catch advice, and so
29 I think, in the past, the SSC has leaned on that 75 percent as an
30 alternative to using the control rule, especially in times when
31 there may be more uncertainty present in the projections than is
32 captured by the analysis itself, and so I think that's the way to
33 go.
34
35 **DR. SIEGFRIED:** Okay. Great. I think that we're clear on that,
36 and tomorrow, when we present, when Matt presents, that, we'll
37 also go into potential measures of uncertainty, and we may be able
38 to discuss more about how to incorporate the LGL uncertainty, but
39 we'll go over that with you all tomorrow. Thank you.
40
41 **CHAIRMAN NANCE:** Okay. Katie, thank you so much. With that, we'll
42 go ahead and adjourn, and we'll see you tomorrow at 9:00 a.m.
43
44 (Whereupon, the meeting recessed on March 8, 2022.)
45
46   - - -
47
48   March 9, 2022

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 1
 2                    WEDNESDAY MORNING SESSION
 3
 4                              - - -
 5
 6  The Meeting of the Gulf of Mexico Fishery Management Council
 7  Standing and Special Reef Fish, Special Socioeconomic & Special
 8  Ecosystem Scientific and Statistical Committees reconvened on
 9  Wednesday morning, March 9, 2022, and was called to order by
10  Chairman Jim Nance.
11
12  CHAIRMAN NANCE:  Welcome to our second day for our SSC discussions,
13  and we'll go ahead and have Ryan give us the scope of work for
14  Item Number XI, which is what we're going to start out with this
15  morning.
16
17      REVIEW: CHARACTERIZING FLEET BEHAVIOR USING ANALYSIS OF VESSEL
18                    MONITORING SERVICE DATA
19
20  MR. RINDONE:  All right.  Thank you, Mr. Chair.  Dr. Perruso is
21  here with us today to start Wednesday's show and to talk about a
22  presentation on applying movement analytics to the Gulf reef fish
23  fishery using algorithms and commercial vessel monitoring service
24  data, amongst some other data, and these aggregated data can be
25  used to make inferences about patterns and changes in trends in
26  commercial fishing effort for reef fish species, for the commercial
27  fleet hook-and-fleet especially, which is in a lot of the same
28  places that recreational fleets tend to visit as well.
29
30  These can be used to describe changes in stock dynamics observed
31  in other surveys, and so the SSC should consider the information
32  presented and ask questions and provide any feedback, as
33  appropriate, and so, Dr. Perruso, the show is yours.
34
35  MS. MATOS:  Dr. Perruso, I don't have Shay on yet.  Is he hopping
36  on now?
37
38  DR. LARRY PERRUSO:  Shay just sent you an email, and he says that
39  he doesn't a link to the webinar, and he has just emailed Jessica.
40
41  CHAIRMAN NANCE:  Okay.  We'll get that to him.
42
43  DR. PERRUSO:  Okay.  He's pretty critical to the presentation, but
44  I will go ahead and start.
45
46  CHAIRMAN NANCE:  Why don't you go ahead and hold on, just a second.
47  Do you have control?  Wait for Jessica to bring up the PowerPoint
48  and everything, and then you can go ahead, Larry, and we can turn
```

1 that over. Just give us one moment.
2
3 **MS. MATOS:** Shay, would you like to test your sound?
4
5 **DR. SHAY O'FARRELL:** Hi. Yes, I'm here. Can you hear me okay?
6
7 **MS. MATOS:** Perfect. Yes. Thank you.
8
9 **CHAIRMAN NANCE:** Okay. It looks like we're ready, and so, Dr.
10 Perruso, go ahead and start, please.
11
12 **DR. PERRUSO:** Good morning, everyone. My name is Larry Perruso,
13 and I'm an economist at the Southeast Science Center, with the
14 Social Science Research Group, focused on commercial fisheries,
15 mainly, and, for the last few years, really focusing on spatial
16 and temporal dynamics and behavior of the Gulf commercial reef
17 fish fishery.
18
19 Today, we're going to talk about these type of studies, and I'm
20 going to show you some previous work and hopefully get some
21 discussion and suggestions for future research on the
22 redistribution of fishing effort in the Gulf, in response to
23 regulations.
24
25 I would like to acknowledge some funding and research partners.
26 First, the NOAA Fisheries Office of Science and Technology has
27 provided ample funding for this research over the last few years,
28 but the Economics and Social Analysis Division and the Catch Shares
29 Program, and we have a file of research papers linked to the
30 agenda, and you can see all the different authors that are on those
31 papers, but, in particular, I would like to thank Dr. James
32 Sanchirico, and he's at the University of California Davis; Dr.
33 Alan Haney at the Alaska Science Center; Dr. Carlos Rivera; Dr.
34 Iliana Chollett; Dr. Stephen Murawski at the University of South
35 Florida; and, last, but not least, Dr. Shay O'Farrell, my co-
36 presenter, and I will let him introduce himself in a minute.
37
38 The outline of our talk is we're going to talk about movement
39 analytics in general, and then we're going to go on to the methods
40 that we used to predict fine-scale fishing behavior over space and
41 time and how we linked that information to trip-level effort
42 landing and economic data, and so then we're going to present some
43 research that uses the VMS logbook dataset, and then we'll discuss
44 how this research and data may relate to the recent SSC motion
45 regarding how increased catch levels may impact different
46 components of the commercial reef fish fleet, and I will send this
47 over to Shay.
48

123

1 **DR. O'FARRELL:** Good morning, everyone, and so good afternoon from
2 over here, and I'm calling in from a wet and windy west Ireland,
3 and my name is Shay O'Farrell, and I'm a data scientist
4 specializing in fisheries analytics, and my background is using
5 reef fish ecology, with a particular interest in behavior and in
6 movement ecology and what we can learn about moving animals from
7 their movement patterns, and there has been a huge, huge movement
8 in this field over the past decade or so, with new technologies
9 and techniques coming online.
10
11 Over the past seven years now, I've been working with Larry and
12 others at NOAA and at UC Davis and at the University of Miami and
13 seeing how we can apply some of these kinds of tools in fisheries,
14 and a moving fishing vessel has many of the same characteristics
15 as a moving animal, and we're actually planning to have some this
16 tools -- Using machine learning tools to see what we can extract
17 from these kind of movement data.
18
19 The broad questions are, with movement data, there are sort of two
20 kinds of questions, really, that you can ask. You can ask where
21 do people go, which is kind of mapping spatial behaviors, but then
22 you can start to also drill down and start to ask questions about
23 what motivates them to go there and why are they making these kinds
24 of decisions, and, this way, I think we can -- Once we can start
25 to understand decisions, then we can make a better shot at actually
26 predicting what people are going to do under a different set of
27 circumstances.
28
29 Recently, there has been some very high-profile work done on
30 mapping fishing behaviors, and Global Fishing Watch had a big paper
31 looking at the global footprint of fishing, where they actually
32 managed to map, using Automatic Identification System data, which
33 is a tracking technology, and they mapped fishing behaviors all
34 over the world, at a global level, and, in fact, there's a lot
35 more fishing than we thought there was and a lot of illegal,
36 unreported fishing that is happening as well.
37
38 Closer to home here, we recently, a few years ago, did some work
39 in the Gulf of Mexico, where we were actually looking at how can
40 we improve this detection of fishing behavior in movement data,
41 and so we'll talk a little bit more, later on, about how we actually
42 do that, but what we want to see is, given the characteristics of
43 the dataset, can we improve our ability to actually detect where
44 exactly vessels are fishing and when they are fishing.
45
46 The way I tend to think about it is, if you think of movement
47 tracks, if you've got a tracking device on a vessel, or on your
48 cellphone in your pocket, it tracks a record of where an agent has

1 been visiting, and so it's not just a record of those places
2 visited, but it's a record of the decisions that are made along
3 the way to actually get there each time, and, of course, in
4 fishing, this is particularly relevant. We know, kind of at any
5 kind of point in time, a fishing captain is making decisions about
6 where to go next, based in part on what has happened to-date, what
7 the current conditions are, what their expectations are, and so
8 on.
9
10 You get these kind of questions, and you can break them down into
11 sort of normative versus empirical questions, and so normative
12 really is kind of what should an individual do, what's the best
13 course of action, and, so, basically, what is the best way that an
14 individual can move to maximize, for example, their catch, and the
15 other aspect then is empirical, which is equally, if not more
16 interesting, and it's kind of what decisions do individuals
17 actually make, rather than what ones should they make, and why do
18 they make the sort of individual decisions that they do, because
19 we know that there are all sorts of biases in our decision-making,
20 and we can try to get at picking at some of those biases at the
21 level of individual vessels and improve our predictions.
22
23 Once we actually start working at the level of individual vessels,
24 when we're using our data at the vessel level, rather than just a
25 broad aggregated fleet level, we can start to actually infer
26 consistent spatial behavioral traits of a vessel, of each
27 individual vessel, and how they behave, how they respond, for
28 example, to bad weather, how they respond, for example, to changes
29 in fuel prices, and so how they respond to closed areas. When you
30 close off an area to fishing, how do different vessels basically
31 respond to that, based on their characteristics?
32
33 Then we can predict kind of different vulnerability to shocks,
34 spatial shocks of closures, among counties, of course, or even
35 amongst the vessels themselves.
36
37 **DR. PERRUSO:** I will go ahead and take over on this one, and so
38 I'm going to describe, in detail, our datasets that we used. The
39 first one is vessel monitoring system data, and that is collected
40 by the NOAA Fisheries Office of Law Enforcement, and this is
41 required for commercial reef fish vessels, and use locational data,
42 latitude and longitude, that sends hourly pings with time stamps,
43 and it's vessel specific.
44
45 We also use information from the Southeast Coastal Logbook family
46 of forms, and we transform the logbook data into what's called the
47 Southeast Economic Panel, and so this is a trip-level panel, and
48 we include landings, and it's linked to schedule numbers and vessel

1 ID, and we have effort information, gear information, landings
2 information, depth, vessel characteristics, trip and start dates
3 and unload dates, but we also link revenues by species to each
4 trip, and we do that by estimating prices from the accumulated
5 landings systems database, and that's reported by dealers to the
6 state agencies.
7
8 It's also possible to link other surveys from our economic surveys
9 and trip-level and annual surveys, and also discard surveys, to
10 this panel by schedule number. We also use observer data, and a
11 certain percentage of reef fish trips are required to have
12 observers onboard. This is valuable information that helps train
13 the machine learning algorithms of where fishing takes place on a
14 trip. Then we also can incorporate biophysical data, such as
15 bathymetry and artificial and natural structure and wave and
16 weather data.
17
18 **CHAIRMAN NANCE:** Larry, we have a couple of questions, if you don't
19 mind.
20
21 **DR. PERRUSO:** Okay. That's fine.
22
23 **CHAIRMAN NANCE:** Dr. Gallaway.
24
25 **DR. GALLAWAY:** Jim, I'm sorry. I forgot to put my hand down after
26 I got recognized. Thank you. No questions.
27
28 **CHAIRMAN NANCE:** Okay. Thanks. Larry, go ahead. I'm sorry.
29
30 **DR. PERRUSO:** Okay, and so I'm going to turn it back over to Shay
31 to discuss the nuts-and-bolts of the methodology to predict fishing
32 spots.
33
34 **DR. O'FARRELL:** Thanks, Larry. What we want to do is we want to
35 be able to say -- With the vessel's movement track, one of our
36 first steps is to be able to work out where and when vessels are
37 fishing, and so the way we do that is we use the observer data,
38 which, in the Gulf, I think it's about 2 percent of trips have an
39 onboard observer, and what we do is we use those trips to actually
40 kind of train and test the machine learning algorithm to recognize
41 fishing behavior in the actual tracks themselves, and so I've got
42 an example here, and this is a VMS track from Honduras, and I'm
43 just going to show you, broadly, how it works.
44
45 In this track, we would have -- This is for one particular vessel,
46 and the black lines show kind of the movement of the vessel, and,
47 if you look at the gray blobs in the background there, it would
48 actually show the individual VMS pings, which is the location and

1   the time stamp that were broadcast at the same time, and so, up in
2   the top-left, I marked an area in green, and so this an area where
3   the observer has said the vessel is fishing.
4
5   We label those points as being this is fishing, and we label the
6   other points within that as not fishing, and so each vessel, when
7   it's actively engaged in fishing -- Imagine being in a hot air
8   balloon, or an aircraft or something, and you're looking down on
9   top of the vessel, and you can see its pattern that it was -- A
10 particular movement pattern is going to follow its speeds, its
11 turning angles, its acceleration, its deceleration, and so on, and
12 these actually vary very much individually by different gears.
13 That bottom longline will have very, very different movements, a
14 signature movement pattern, than say like somebody using bandit
15 fishing gear.
16
17 Once we've worked out all of the different movement characteristics
18 of the track itself, then we can add a bunch of other variables to
19 the data, and so we can add time, various time variables, such as,
20 obviously, the time of day, but also the time since dawn, because
21 a lot of vessels will actually start fishing within a given time
22 of dawn, and, of course, the time of dawn will vary across the
23 year.
24
25 We have the depth, we have the distance from port, and we can add
26 in the local weather conditions from other NOAA datasets, such as
27 where we have wave height and we have windspeed, and we can add in
28 chlorophyll data and so on, if we're actually looking for
29 aggregating areas, and we can add in fuel price and so on. We can
30 put all of these together into this dataset, where we now know the
31 vessel is fishing at this point, and the -- At that point, all
32 these other variables take certain values as well.
33
34 We pass these data over to our machine learning algorithm, and
35 here it's kind of represented by Wally, and so, basically, the
36 algorithm goes in and actually looks at all of these variables,
37 which you could label as fishing, and it looks at the points which
38 are labeled as not fishing, and it learns to tell the difference
39 between them by a fairly hyperdimensional combination of those
40 variables, and it creates kind of a space within which it thinks
41 that fishing is happening versus space which it thinks it isn't
42 happening.
43
44 Then what we do is we then deploy that trained algorithm on the
45 rest of the data, where there wasn't an observer onboard, and we
46 ask it to tell us in which other locations does it think that the
47 vessel was actually fishing, and so here we've marked it in red,
48 and, in those red locations, it is seeing characteristics that are

1 very, very similar, or sufficiently similar, to the ones that we
2 have labeled as being fishing in the green area up in the top-
3 left-hand of the image.
4
5 **DR. PERRUSO:** I think maybe we might pause a second, before we go
6 into the --
7
8 **DR. O'FARRELL:** That gives us an idea of sort of how accurate we
9 are with that, and so --
10
11 **DR. PERRUSO:** I think we're going to pause for a second and see if
12 there is any questions about the methodology of the classification.
13
14 **CHAIRMAN NANCE:** Thank you. Any questions from the SSC on this
15 portion of the discussion? Doug Gregory, please.
16
17 **MR. GREGORY:** Good morning. Thank you, and this is very
18 interesting. With the tracks that you showed in the various
19 slides, you had the area where an observer was on the boat,
20 obviously fishing, and you knew that, but then you had the machine
21 learning segment that identified other fishing spots, and so I
22 would assume the observer is on the boat for the entire trip, and
23 was that track from one trip, or was that multiple trips put
24 together, or multiple vessels put together?
25
26 **DR. O'FARRELL:** That's a great question, and that track would have
27 been from multiple trips.
28
29 **MR. GREGORY:** Okay. Thank you.
30
31 **CHAIRMAN NANCE:** That's the same question that I was going to ask,
32 Doug. Any other --
33
34 **DR. O'FARRELL:** For each vessel, we would have -- For some vessels,
35 of course, we don't actually have any onboard observer data,
36 because it's not evenly distributed across the vessels, and so,
37 basically, from our training set of trips for which we have an
38 observer onboard, then we can identify fishing from those and
39 deploy it on the other ones, based on trips where there was no
40 observer onboard the vessel.
41
42 **CHAIRMAN NANCE:** Okay. Thank you. Harry.
43
44 **MR. BLANCHET:** The question that I had is, when you have the
45 observers present, did you leave part of the observer data out of
46 the original training series and then retest, to see how well the
47 machine did in identifying trips, or was that not done? Thank
48 you.

1
2 **DR. O'FARRELL:** I will take that one if you like, Larry. Everything
3 was cross-validated, and so there are two different levels at which
4 we can cross-validated, and we can do like a standard kind of leave
5 one out kind of approach, where we split the training dataset and
6 we reserve some of it for testing.
7
8 The algorithm that we tend to use is random forest, and random
9 forest also has built in what it calls an out-of-bag estimation,
10 where the random forest actually does the same thing itself and
11 actually takes a portion of each sample and puts it to one side,
12 and, in turn, it validates itself, and so we actually used both of
13 those, and, again, the paper I showed compared the two, but it's
14 a good question, the cross-validation.
15
16 **CHAIRMAN NANCE:** Okay. Thank you. Any other questions from the
17 SSC? Trevor.
18
19 **MR. MONCRIEF:** Thanks, Mr. Chair, and so this is a very interesting
20 presentation so far, and I was just kind of wondering a little
21 bit, and you might get to it later on, but I am trying to think
22 about this in the context of the fleet behavior, and so you listed
23 out the patterns of bottom longline versus bandit fishing and
24 everything, but I was wondering, on a scope of like multiday trips
25 versus single-day trips, and how that might have some sort of
26 effect on where a lot of this effort is assigned if a boat is out
27 for three days in a given area fishing.
28
29 I know it would probably have to rely on a pretty good amount of
30 the observer coverage, to make sure you fully identified when and
31 where those vessels were fishing, but that's kind of -- My head is
32 kind of thinking around that space right now.
33
34 **DR. PERRUSO:** We're going to go through some research that will
35 address maybe that specific question, but, Shay, if you would like
36 to expand on maybe the difficulties of short trips versus longer
37 trips, and that might be applicable.
38
39 **DR. O'FARRELL:** It's a good question, and so, generally speaking,
40 in terms of identifying individual pings, which are fishing or not
41 fishing, it shouldn't make any difference, really, whether it's
42 from a one-day trip or a three-day trip or a ten-day trip, and it
43 actually has to do with characteristics of the spatial behavior
44 itself at that point, how the vessel is moving and what depth it's
45 in and so on.
46
47 What does make a big difference is when you're actually trying to
48 match the logbook trips to the VMS trips, and so one of the tasks

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1 we have, when we're putting these datasets together, is we have to
2 segment the VMS track into trips, and so basically a trip being,
3 of course, when a vessel leaves port and heads out to sea, does
4 some fishing, and then comes back again.
5
6 Then what we do is trips to VMS data to the recorded logbook dates
7 and so on, and we match the segmented trips, and we don't always
8 have a perfect match to those, especially on short trips, and the
9 reason generally, we believe, is because the trip dates are self-
10 reported, and small amounts of just sort of an error in the
11 reporting date, just a day either side, can mean that the logbook
12 trip doesn't necessarily match as easily with the VMS trip.
13
14 From two days upwards, the matching is more reliable, and I like
15 to think of it as -- I think to think of it as trying to -- Imagine
16 trying to drop a point inside a window. The bigger that window,
17 the landing date for that logbook, and it's easy to drop a point
18 into a large window, but, as that window gets smaller, it basically
19 disappears back into another point.
20
21 Basically, for the VMS trip, we would have one day, and for the
22 logbook we have one day, and you have to have an exact match, and
23 so we spent quite a lot of time improving this and adding kind of
24 a degree of fuzziness in the matching, and so that, basically, if
25 there are set reporting errors, in terms of the days written down,
26 the algorithm can often pick those up, but, generally speaking,
27 shorter trips is more challenging to match the two together.
28
29 **MR. MONCRIEF:** Thank you.
30
31 **CHAIRMAN NANCE:** Jack Isaacs, please.
32
33 **DR. ISAACS:** Good morning. What variables do you capture about
34 like the size of the ship and the size of the crew and those sorts
35 of things?
36
37 **DR. O'FARRELL:** Again, Larry, I will go with that, if you like.
38 We actually use the size of the vessel -- The way we use the size
39 of the vessel, because, of course, that won't affect the movement
40 characteristics, but the way we do that is we take the speeds and
41 so on and the time intervals since kind of the previous fishing
42 behavior, and we actually standardize those by vessel size. It's
43 not simply the raw speed, but the speed per the size of the vessel.
44
45 What's interesting is we haven't actually found that it's made
46 much of a difference in the actual classifier. The classifier,
47 after we run it, it comes back and tells us what it was happy with
48 and what it was unhappy with and things that were working well and

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things that weren't, and that allows us then to tune our data and
to engineer some of the variables to improve the performance, but,
generally speaking, size actually hasn't been that important, and
part of the reason is probably the size doesn't vary within a
vessel, of course, whereas what we're actually trying to pick out
is the things that do vary with whether or not a vessel is fishing,
such as its depth and time of day and so on.

We don't currently use data on the number of crew, and we don't
have those data recorded, and I think -- Larry, correct me if I'm
wrong, but they're not complete though, and one of the issues is
sometimes those data have not been filled out, and so we've tried
to use variables that we know we have very good coverage of,
because then we know that we have them for pretty much every vessel
in the dataset.

DR. PERRUSO: Maybe -- I'm not sure if the VMS data has crew
information on it, but certainly, once we link to the logbook
records, we have that trip information of all kind of effort
variables, like days-at-sea, number of crew, fishing location
choices, gear choices, and so, when we get into the applied aspect
of tackling specific regulatory or environmental shock problems,
we could incorporate that into the analysis, to see if there is a
difference with small crew versus large crew, and also gear
differences and that sort of thing, but I don't think, within the
classifier, if we're just using the VMS and observer data -- If
there is crew size coming in on the VMS data, I'm not sure if that
would be complete, and that could be an issue, but it should
probably be heavily corelated with days-at-sea and that sort of
thing.

DR. O'FARRELL: It's one of the very attractive characteristics of
the machine learning algorithms, and so we use the random forest,
but we -- They don't overfit with variables, and so you can
actually add lots and lots of different variables in there, and so
kind of a more classical regression approach, and you hit
overfitting problems pretty quickly if you start adding lots of
variables, and you have issues with kind of different variables
being correlated with each other, because we don't have that
problem in these kind of algorithms, and so you can actually add
extra variables in, to find out basically are they improving your
classification or not, and so you can, in principle, put them in
okay, and so that is, as I said, is an attractive characteristic.

CHAIRMAN NANCE: Dave Chagaris, please.

DR. CHAGARIS: Thank you. This is a really neat study, but I have
a question about the variable importance, and is that something

1 that you guys have looked at, or you're able to look at, to try to
2 understand not just where and when vessels are fishing, but
3 potentially why, and so how does fuel price and weather, and maybe
4 even regulatory changes, affect the effort distributions, and can
5 you extract those from this random forest model approach?
6
7 **DR. PERRUSO:** Shay, I'll take that one. As we go through these
8 studies in the next few slides, you will see how we've applied
9 those type of questions, using the data in the Gulf of Mexico to
10 the commercial reef fish fleet.
11
12 **CHAIRMAN NANCE:** Okay. Let's go ahead, and I think we can address
13 that question I think as we go on, but thank you. Larry and Shay,
14 go ahead.
15
16 **DR. O'FARRELL:** I have a bit of a lag at my end, and so I apologize.
17
18 **DR. PERRUSO:** Okay, and so we talked about the -- We've done the
19 classifier, and we're going to the logbook data at the trip level,
20 and also vessel ID and time levels, and so a major theme that might
21 of interest to this discussion today is what's called the explore-
22 exploit tradeoff.
23
24 You have the idea that exploring provides new information, but
25 uncertain payoff, and exploiting provides a more certain payoff,
26 but you might do better somewhere else, and this is a classic risk-
27 taking versus risk-aversion type of payoff matrix.
28
29 It's obvious how this could apply to commercial fishing and the
30 relative behavior of the fleet to new opportunities or
31 restrictions, and we should also consider that the reef fish fleet
32 is heterogenous, and so it could benefit fishery managers to
33 understand components of the fleet and clusters and behavioral
34 clusters that might react differently to different types of shocks
35 or regulations.
36
37 This is the motion that came out of the last SSC meeting, to
38 encourage the Science Center to analyze how catch level increases
39 could impact different fishing sectors with respect to the ability
40 to redistribute fishing effort according to localized abundance
41 and depletion patterns, and so, today, hopefully we're going to
42 show you some of the data that may be available to address this
43 and some of the analyses that we've done that may be applicable to
44 this motion.
45
46 The next two articles we're going to start with may give insight
47 into the ways that we can study the fleet's reaction to changes
48 and also the different types of homogeneity that may exist within

1 a certain fleet, not just longline versus bandit and different
2 gear choices, but also within that longline sector, that bandit
3 sector, that there may be different types of individual operators
4 that could be characterized and may react differently to an
5 increase in catch levels. I will turn it back over to Shay to
6 discuss these two, and then I'll come back with some other studies
7 that we've done. Shay.
8
9 **DR. O'FARRELL:** Thanks, Larry. The explore-exploit tradeoff has
10 got kind of a long theoretical history, and it goes back really to
11 the second World War, actually to Bletchley Park and the
12 codebreakers there, and they were interested in is basically
13 optimality at the time, and so, basically, there must be some kind
14 of optimal balance between exploring and exploiting, and so , with
15 exploiting, you generally know what you're going to get, but the
16 problem is you might do better somewhere else.
17
18 With exploring, you get to go and find out what is elsewhere, but
19 you might have done better if you just kind of stayed where you
20 knew it was good, and so the theory is that, somewhere in between
21 those, there is some kind of optimum point, but finding that point
22 has been incredibly difficult, and just in theoretical terms, but
23 some progress was made in the 1970s, using a very constrained
24 version of the problem, but there have been very few opportunities
25 to actually -- In fact, I don't know of any opportunities to
26 actually look at this problem in the natural world, in the real
27 world, using a real human problem, such as basically where to
28 actually define fish.
29
30 We realized that we had an opportunity, with our dataset, to answer
31 that question, and so, back in 2009, there was a closure of the
32 longline fishery off the coast of Florida, as resulted by a catch
33 of too many sea turtles, and, if you look at the three panels on
34 the slide there -- If you look at the panel on the left, we've got
35 a map there, obviously, of Florida, and the black-dashed line is
36 the boundary of the turtle closure, and the heat map that goes
37 from kind of cool yellow colors to warm, red colors is the
38 intensity of fishing within that area prior to basically the
39 closure happening, and so you can actually see, when the closure
40 happened, it cut off a lot of very, very large prime fishing area,
41 and so it's a very, very important event.
42
43 First, we looked at, first, before the closure happened, for two
44 years before the closure, and we decided to explore -- To do that,
45 first, we had to actually calculate a metric of how exploratory
46 vessels are, and so that's going to be looking at the middle panel
47 there, and what you have is, for each of our vessels in our dataset,
48 we basically looked at their location choice sequence, and that's

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1 your X axis there, and so, basically, for each vessel, we took all
2 of their location choices over that two-year period. They visited
3 Location A, then B, and then C, and then A again, and then B, and
4 then A, and then C, and then D, and so on.
5
6 What we did is we calculated what called the -- entropy of that
7 theory, and the -- entropy is basically the measure of the
8 predictability of the time series, and our rationale here was
9 basically that individuals that are exploiters, that tend to
10 consistently go back to the same place over and over again are
11 very easy to predict, low entropy, and I will give the example
12 here of basically my parents when they go out for dinner.
13
14 Whenever my dad goes to a restaurant, you be guaranteed that he's
15 going to order the steak. Every time, he will order the steak and
16 fries, guaranteed, and so he's the very, very low entry. He
17 doesn't explore, and he knows what likes, and he will basically go
18 for it every time.
19
20 My mother, on the other hand, is totally the opposite. When she
21 goes to a restaurant, she sees it as an opportunity to try
22 something new, since she's never had it before, and that's much
23 harder to predict, because, basically, you don't know what she's
24 going to go for, and, in that case, she is much higher entropy,
25 and so, basically, what you would calculate, over time, is, if you
26 looked at my dad's steak choice over a few years, you would see
27 that he basically always goes for the same thing, whereas, if you
28 looked at my mom's choices, as a sequence over a few years, you
29 would say it's unpredictable. It's very hard to predict.
30
31 What you're seeing in that middle panel there is vessels with --
32 Each of those gray lines represents the location choice sequence,
33 the entropy of that, as calculated over time for each of those
34 vessels, and vessels towards the bottom of the lot -- Basically,
35 they have a very low entropy, and they are consistently low
36 entropy.
37
38 When we start the first year of data, we more or less use it as
39 the burn-in, and then, the second year, we actually use the --
40 Once they kind of reach an asymptote, then we actually get an
41 average value from there.
42
43 What you will see is the very consistent vessels towards the
44 bottom, and the very exploiting vessels tend to do the same thing
45 over and over again, whereas very exploratory vessels tend to try
46 different things over and over again.
47
48 What we expect is you might distribute vessels somewhere around

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the middle of that on the vertical axis, which would have some
kind of payoff, because they're doing a bit of exploring and a bit
of a exploiting, but what was interesting is we didn't actually
find any relationship at all between how exploratory a vessel was
and how well it performed, and so we looked at just kind of linear
relationships, and we looked at kind of quadratic relationships,
again hoping for some kind of optimality, and, sure enough, we
didn't find anything, and this is sort of what a lot of workers
had predicted would be the case, because this problem is so hard
to solve, even in a theoretical framework. That fishing captains
would be able to do it in their heads is very unlikely.

What we did look at then is we looked at after the turtle closure,
and so we basically said, if, during the turtle closure, if, very
suddenly, these vessels had a very large chunk of prime fishing
ground removed, and they suddenly had to basically move off
somewhere else, what would happen then, and what we found is that,
sure enough, vessels which had a history of investing in
exploration did much better after the closure, because, of course,
they lost some of the grounds they had, but they had other places
they knew and information in their heads that they could actually
use then to go to other places.

Those who had always gone to the same places, when they lost the
-- It was the greatest impact on how well a vessel did, and more
exploratory vessels did much better right after the disturbance,
and over time, it tended to diminish, which we kind of expect, as
information gets shared and so on, and we also controlled for
displacement and other variables of displacement being the amount
of ground that was actually lost, and, of course, if a vessel
didn't actually lose very much of its ground during the closure,
we wouldn't expect it to be impacted at all.

The next question, the next paper we did then, we said, well, if
we take this trait that we can quantify of exploration, and we
look at vessels that have sort of like higher or lower exploration,
what about other vessel-level traits that we can actually calculate
from our data, and how do those actually impact on vessels, and we
calculate a range of different variables that we were able to
extract from our movement data, and so our we have, for example,
the average numbers of days-at-sea, their average revenue, and we
had also the variance, the standard deviation of revenue, the
standard deviation of days-at-sea, and we had basically risk-
taking in there as well, which we used as basically the propensity
of a vessel to fish in large seas, and so we used kind of wave
height and wind data, and so vessels will consistently kind of go
out in worse conditions, whereas some vessels will tend to avoid
worse conditions.

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1
2   What we did with those is we actually grouped those together, and
3   we did what's called a clustering routine, and so, on the left
4   there, you can see the figure, and each of the dots in the
5   background is one of the individual vessels, and you can see the
6   difference with the arrows pointing out towards the center of the
7   axis of those different variables that we clustered in the space
8   there. It's kind of squashed into two-dimensional space, and you
9   can't pick out clearly which vessel is in which group, but the
10 computer was able to do that for us.
11
12 What we did then is we said how many clusters of types do we have
13 in the data, and we ended up with three different what we call
14 fishing behavioral types, and these have been kind of -- If you
15 like -- The personality type of that vessel, from kind of high-
16 liners, maybe your class of vessels that go out and always come
17 back with the vessel kind of up to the -- It's got so much catch
18 in it, versus then, at the other end, having the operators who
19 wouldn't necessarily be quite as competitive.
20
21 What we looked at then is, during the disturbances in 2010, and
22 there was a whole bunch of disturbances, from Deepwater Horizon
23 and so on, and we looked before and after this range of
24 disturbances at our different clusters, and said, well, what
25 happened to them, to these vessels in each of these groups, and do
26 they stay within their cluster, or do they exit the fishery, and
27 what we found is that, sure enough, what you think of as your high-
28 liners, what we found is that they have very, very low exiting
29 from the fishery, and so of the -- Nearly 60 percent of that group
30 actually left the fishery during the period of those disturbances.
31
32 What we were able to see is, kind of from these different types,
33 and so the different typologies, we were able to see that there
34 were very, very different effects on the different types of
35 vessels.
36
37 **DR. PERRUSO:** Shay, I will take it from here, but I think maybe it
38 might be worthwhile to pause for some questions, because those are
39 some pretty complex studies and slides there, and so those are the
40 two studies that we did that can identify different behavioral
41 clusters within a heterogenous fleet, but also risk-taking and
42 risk-averse, as well as entry or exit dynamics from the fleet as
43 well, or the fishery. Jim, did you want to see if there are any
44 questions on those two papers?
45
46 **CHAIRMAN NANCE:** You bet. Thank you. Dave Griffith, please.
47
48 **DR. GRIFFITH:** Hi Larry and Shay. Thanks a lot for this

1 presentation. I am curious about whether or not you found that
2 fishermen would shift between these two strategies that you're
3 talking about, explorer versus exploiter, or if they would pretty
4 much get in one of these behaviors and then stay in it for the
5 duration, pre and post-disturbances, and also whether or not you
6 have information on kind of the experience, or knowledge base, of
7 the captains that are on these vessels. Thanks.
8
9 **DR. PERRUSO:** I will let you take that, Shay.
10
11 **DR. O'FARRELL:** I can handle that one, Larry. Your first question
12 is interesting, and so we use the term "strategies" for -- It's a
13 little bit misleading, because, in our data, we didn't actually
14 look at the disturbance and what happened and did they go back to
15 -- We didn't look at whether the people actually then -- When the
16 territory was opened again, did they just go back to what they
17 were doing.
18
19 The psychology literature strongly indicates that how exploratory
20 an individual -- The example of my father and my mother going out
21 for dinner, and so my dad always does the same thing, and, of
22 course, individuals can and do change over time, but we stay away
23 from kind of using terms like "personalities" and so on in the
24 paper, because we don't actually have data on personalities, of
25 course, and we just have movement of vessels. At a personality
26 level, we would expect that to be relatively stable.
27
28 After the disturbance, what we would expect is that individuals
29 who have been -- Who were exploiters beforehand, who hadn't
30 actually gone to that many places, were then forced to go to some
31 new places, but I would expect that, as we revert back, maybe they
32 would pop into a new set of kind of stable choices that they would
33 actually stick with, but it is an interesting question, and we
34 haven't gone there, and so that would just be my sense of what you
35 probably would be likely to find in that.
36
37 The second question was in terms of experience, and the captain's
38 experience actually was one of our metrics in there, and we found
39 that it didn't actually make much difference, which is also pretty
40 interesting.
41
42 Again, one of the challenges there is that, again, we don't have
43 data exactly on captains exactly, and we have data on vessels, and
44 it's possible that, over time, the skippers do change on a vessel,
45 and so we think that most of them are reasonably constant, and so
46 we don't know for sure, but it wasn't actually as strong of a
47 predicator as I would have expected to be.
48

1 If you remember when we showed the plot of where we calculated the
2 entry, and it was divided into two panels, and the left-hand side
3 was approximately the first half of each individual's record, and
4 that was basically a burn-in period, and, in the second half, we
5 actually kind of measured it, and we kind of expect that,
6 basically, within that period, kind of the less experienced
7 captains would all have been at least fishing for some time in
8 there. If you basically just dropped in a captain who was
9 completely new to the fishery, you wouldn't expect them to know
10 where to go, unless, of course, they talked with other captains,
11 and, of course, that's something we haven't measured and, at this
12 point in time, can't measure it

14 We know there's a lot of information sharing within fisheries, and
15 we know there's a lot of disinformation sharing within fisheries,
16 and we don't really know, but it would be really interesting, and
17 I would love to actually be able to find out better about that,
18 about how that information does get passed among the captains.
19 Larry, did you want to add to that?

21 **DR. PERRUSO:** No, and I think you covered it. We don't have
22 individual captain data, and so it's basically a vessel effect.

24 **CHAIRMAN NANCE:** Any other questions? Doug, please.

26 **MR. GREGORY:** Thank you, sir. I've got two, and this is quite
27 complicated, and it's over my head, for the most part, but did you
28 consider allocation, or shares available, to these vessels,
29 because most of these are in an IFQ program, and how that affected
30 where they would fish or how long they would fish at a place? That
31 is one question, and I have another one in follow-up.

33 **DR. PERRUSO:** I will take the IFQ question, Shay. The theme,
34 especially on these studies, is going to be the confounding factors
35 going on during these time periods, and so, in a lot of these
36 studies, we do a transition period, where there was to look at
37 Deepwater Horizon, implementation of the grouper-tilefish IFQ, the
38 turtle closure, and so, at the time the grouper-tilefish IFQ was
39 implemented, and I'm sure that had an effect on it for sure, but
40 I don't think we explicitly had a variable for any type of vessel
41 share or allocation in these two analyses.

43 **DR. GREGORY:** Okay. My next question is more mundane, and are
44 there any constraints that the agency puts on the researchers in
45 using the VMS data? I don't recall what the rules are, but I
46 thought they were pretty stringent in the beginning of the use of
47 VMS, because of the sensitivity fishermen have of not wanting other
48 people to know where they fish.

1
2 **DR. PERRUSO:** We aggregate it to the vessel level, for a rule of
3 three type of thing, and so we don't ever show individual fishing
4 points, and then we aggregate those fishing points into usually
5 like one-mile polygons, and so we look at heat maps instead of
6 actual fishing locations, to protect the confidentiality of
7 business operations.
8
9 **MR. GREGORY:** Thank you, because I have noticed other researchers
10 using VMS data, and I didn't know if the agency had specific
11 constraints, like they did with confidential data, and so thank
12 you very much.
13
14 **DR. PERRUSO:** Sure.
15
16 **CHAIRMAN NANCE:** Any other questions?
17
18 **DR. O'FARRELL:** I might add in there that we are able to use, in
19 our models, and statistical models and so, of course, we can use
20 all of the data, which gives us more statistical power, but, as
21 Larry said, anything that's for display, anything that kind of
22 goes for individuals that are not within the non-disclosure
23 agreements, everything is basically redacted to the rule of three,
24 and there is no personally identifiable information used at any
25 point in any publications.
26
27 **CHAIRMAN NANCE:** Thank you. There are no other questions, and so
28 we can go ahead and move forward. Harry, please.
29
30 **MR. BLANCHET:** This is kind of a follow-up to Doug's question. In
31 the presentation, beginning on Slide 10, you showed an example
32 that had specific latitudes and longitudes for what seemed to be
33 a single vessel.
34
35 I understand that you might know that Joe Smith, captain of The
36 Misadventure, did that, but that is identifying a specific vessel,
37 and more to the point, perhaps, is if you give me within a nautical
38 mile, or within two or three nautical miles, and say here is a hot
39 spot, me as a captain of a professional fishing vessel, I will
40 have enough ancillary data to be able to narrow that down pretty
41 well to where are the lumps and peaks and breaks or other features
42 that might be fishable within that range, and so there is still
43 some information being transferred, and so, in terms of
44 confidentiality, I just think that this is something that needs to
45 be thought about very carefully, about what you are saying and
46 what people are hearing may be two different things, and so just
47 a word of caution there. Thank you.
48

1 **DR. PERRUSO:** I will say, just on this Slide Number 10, this is
2 just an example from a Honduras vessel track, and so this wasn't
3 any type of reef fish vessel, and we would not publish any type of
4 data such as that, but I do understand the concerns, and I think
5 it is a discussion that should probably take place within this
6 group, and also with leadership at the Science Center and the
7 Regional Office, but also across the other regions as well.
8
9 **CHAIRMAN NANCE:** Thank you. Let's go ahead and move on.
10
11 **DR. PERRUSO:** Okay. I will go ahead and finish this up today.
12 This study, Berenshtein and others looked at the placement effects
13 on fishery-dependent communities when their fishing grounds are
14 closed.
15
16 In this paper, we simulate a Deepwater-Horizon-type oil spill, but
17 the methods can be generalized to any spatial displacement type of
18 event, and we employed three different data sources, and the orange
19 square is UM researchers, University of Miami researchers,
20 designed a three-dimensional oil transport model to simulate
21 spills in the eastern and western Gulf, which resulted in fishery
22 closure polygons over space and time.
23
24 The green box represents the VMS logbook integrated dataset that
25 we have been describing to-date, and we want to predict the
26 economic displacement to the bandit and the bottom longline fleets
27 due to the oil spill.
28
29 The purple represents the National Marine Fisheries Southeast
30 Social Indicators Database, and, with that, we compute what is
31 called a social vulnerability indices, or SOVIs, to relate the
32 economic displacement to effects on fishery-dependent communities
33 at the county level.
34
35 Once an analysis of the three datasets takes place, it results in
36 a measurable, spatially-explicit socioeconomic impact to the
37 industry and communities due to the disruption, and, again, this
38 can be generalized to environmental shocks or regulatory shocks.
39
40 Here are the simulated oil spills and the relative predictions of
41 losses to different Gulf coast counties, and so the darker colors
42 on the counties represent higher potential vulnerability, and,
43 thus, higher possible negative socioeconomic impacts due to the
44 oil spills.
45
46 Note, in the graph to the right, that this SOVI score, these
47 indices that we produced here, are a relative measure, and so, in
48 future research, I think we can put this idea of communities --

1 Instead of saying relatively -- You can see that the proportional
2 losses go from zero to one, light to red there, and the extreme is
3 the potentially more vulnerable counties, and, instead of doing
4 relative scores, we would like to link revenue displacement and
5 fine-scale fishing grounds that are either closed, due to
6 disruption, back to the community level, and especially relatively
7 more vulnerable ones, and so possibly fishery managers could come
8 up with options that could help mitigate this vulnerability.
9
10 We used this same idea to study the 2018 red tide event in the
11 Gulf of Mexico, and I will let this run for a couple of seconds,
12 and so this is the red tide event here.
13
14 What we did is we took one week in 2017, October 16, and that same
15 week in 2018, and the black is the red tide during that week, and
16 the polygons are fishing intensity, and the heat maps are created
17 using predicted fishing locations, and high intensity is where
18 higher fishing took place.
19
20 Our only significant result in this study was that 2018 revenue
21 displacement was only significantly noticed in Pinellas County,
22 and this was derived from the linkage from the VMS to the logbooks
23 data, but, on the surface, it looks like red tide significantly
24 reduced fishing effort from 2017 to 2018.
25
26 However, we have already mentioned the Gulf is famous for its
27 confounding factors, and, in this case, a concurrent hypoxic
28 outbreak was taking place, as well as the October 10 landfall of
29 Hurricane Michael, which also probably likely influenced fishing
30 effort, and so the moral to this story is it's very difficult to
31 isolate one effect, whether environmental or regulatory shocks.
32
33 In this graph, we're going to see that there was a significant
34 decline of fishing effort in 2018 in those red tide areas, and so
35 we can see the proportion of fishing on the vertical axis and the
36 time series on the horizontal axis, and the black line is the
37 proportion of fishing in red tide areas for 2018, and all the other
38 lines are ten years back, and I believe we took out 2010 for
39 Deepwater Horizon, and so we see, at the peak of the algae bloom,
40 from like late September through October, we can see the most
41 displacement, as that black line is well below the other historical
42 fishing patterns.
43
44 Again, there is lots of things going on at this time, and so one
45 unique feature of this research that is ongoing is that we're in
46 the process of reviewing results from ethnographic interviews for
47 affected fishermen, to see if we can develop estimable hypotheses
48 and maybe explain a way some of the confounding factors can isolate

the red tide effect itself, and Dr. Mandy Karnauskas and Dr. Matt
McPherson are co-authors on this project, and this has a lot of
potential for future research to mix qualitative interviews with
this quantitative data that we collect.

Those were two examples of how we studies closures and the effects
on communities, and this paper from Watson and others was actually
done before we started our research with the classifier that Shay
described earlier, and this was a different classifier, but it is
linked with VMS logbook datasets, and this is a study that looked
at the effects of regulatory change on the commercial fleet, and,
in this case, it was the implementation of the grouper-tilefish
IFQ in the pelagic longline fleet.

We identified three time periods, and we had 2009 through 2010 as
the regulatory transition period, and then we looked at the pelagic
longline fleet behavior before 2007/2008 and after 2011/2012, and,
again, there is lots of different confounding factors during this
time, like Deepwater Horizon, turtle closures, hurricanes, and so
it's hard to isolate this factor, but we'll look at these graphs
here, and they show the difference in seasonal fishing effort off
the Florida coast.

What the heat maps shows are the aggregate difference of predicted
hours of fishing before and after the transition period, and so
the blue-green highlighted areas -- There is more fishing for
grouper-tilefish -- For the grouper-tilefish IFQ in those areas,
and the brown is that there was more effort in the pre-period, in
2007/2008, in relation to 2011/2012, after the transition period.

Results from study indicate that there was a large-scale reduction
in fleet size, reduced fishing effort and shorter trips, lower
operating expenses and higher earnings for the vessels that
remained in the fishery.

Currently, we're expanding the use of this dataset into marine
spatial planning, and we have used it to predict these predicted
fishing locations, to contribute to the siting of aquaculture
opportunity areas in the atlas that was recently published by NCOS,
and this is to site of offshore finfish aquaculture requirements
in the Gulf, and, soon, we'll be helping BOEM, using the same data,
with siting wind energy requirements in the Gulf of Mexico.

In the Gulf, we know there is many other fisheries, and this shows
just fisheries, but we also have military and transport and other
stakeholders to consider in spatial planning.

In summary, we have shown research that identifies behavioral

1 traits related to spatial exploration of commercial fleets, and
2 we've shown research that measures socioeconomic displacement to
3 the fleet and fishery-dependent communities, due to environmental
4 shocks, and we have shown research that showed changes in fleet
5 composition in entry and exit dynamics, due to a regulatory
6 transition period.
7
8 Going forward, we'll need to develop methods to evaluate the
9 effects of catch level increases and other regulations in our
10 traditional analytic framework. In other words, we will then need
11 to compare regulatory options and alternatives and show the impacts
12 at the economic and social levels.
13
14 I will mention a new study that's also in the folder that's linked
15 in the agenda that incorporates VMS data for Gulf vertical line
16 commercial vessels with trip interview reports, to study spatial
17 and temporal removal patterns of red snapper, and that is Gardner
18 et al., and that's our most recent study, and I will leave the
19 discussion on the red snapper stock dynamics to the co-authors
20 that may be on this call, and that includes Dr. John Walter and
21 Dr. Mandy Karnauskas. However, I will highlight some aspects of
22 the research that relates to the SSC's motion.
23
24 The linked VMS TIP data is also linked to artificial and natural
25 habitats, to model high-resolution, localized depletion patterns
26 for red snapper, and results indicated that 46 percent of
27 commercial red snapper landings were extracted from artificial
28 structures, while there were several local hotspots on natural
29 reefs, and so this shows the heterogeneity of that fleet component.
30
31 There are regional differences as well in fishing patterns, and
32 approximately 90 percent of Florida landings came from natural
33 reefs, while approximately 75 percent for other Gulf states came
34 from artificial structures, and so, in relationship to the SSC
35 motion, we can see the implications for localized depletion by
36 different types of vessels, in light of an increase in catch
37 levels.
38
39 Furthermore, we would need to address the models to predict these
40 displacement effects and changes in vessel behavior. The workhorse
41 for this type of economic modeling is discrete choice models based
42 on random utility theory. These models are limited by the amount
43 of choice variables that they can incorporate, as well as ignore
44 the endogenous decisions that fishers make at-sea while under
45 partial stock observability.
46
47 Adding to the complexity of that problem is that the choice of
48 fishing location aggregation size, and, in other words, our

1 polygons, have implications as well, and so there is another
2 article in the folder, and it's Depalle et al., and this discusses
3 scale dependency in detail of how big and how small those polygons
4 are made and if those have implications. Then, lastly, we have
5 been predications of fine-scale fishing positions to aid in
6 planning of offshore aquaculture and wind farms, and that's it,
7 and so I guess I will hand it over to Jim for any questions or
8 discussion.
9
10 **CHAIRMAN NANCE:** Thank you, Dr. Perruso and Dr. O'Farrell. We
11 appreciate this presentation. Let's go ahead and -- Jason.
12
13 **MR. ADRIANCE:** My questions relate to Slide 22, if we could pull
14 that up. Thanks. A couple of questions about this, and I will
15 just kind of go through them, and I guess you can answer them, and
16 I will repeat them, if necessary, and so I'm curious, and does
17 this look at different sectors, or is this just a commercial
18 simulation in this one, and I noticed that, regardless of where
19 your incident occurs in there, western or eastern Gulf, that the
20 counties and parishes don't change very much between the two, and
21 I think there's one additional county in one, and a slight change
22 in some shading in the other, and does that relate to the sectors
23 that you looked at, or is that just these are the major fishing
24 centers in the Gulf, and it's a well-traveled fleet, and it doesn't
25 much matter where something occurs? Thanks.
26
27 **DR. PERRUSO:** On the second question first, I believe those are
28 aggregates for both oil spills, and so the results showed that the
29 eastern spill would affect the Florida counties more, and then the
30 western spill would affect the Texas counties more.
31
32 **DR. O'FARRELL:** We had both bandit and longline in there, and, of
33 course, kind of the lion's share of the bandit boats are coming
34 out of Florida, and they're coming out of the same counties, and
35 so, even if the spill is somewhere else, the impacts on the bandit
36 fishery are going to be felt most in kind of the bandit counties,
37 which don't change as much, which you're correct. Go ahead, Larry.
38
39 **DR. PERRUSO:** I was just going to say this one is a simulation on
40 the commercial fleet, but we did use -- The logbook data was actual
41 reported logbook data, to simulate the socioeconomic impacts.
42
43 **MR. ADRIANCE:** Thank you.
44
45 **CHAIRMAN NANCE:** Luke Fairbanks, please.
46
47 **DR. FAIRBANKS:** Thanks, and thanks for this presentation, and also
48 for sharing the articles. It's really interesting stuff here, and

1 I had two questions, and the first is brief. You mentioned, moving
2 forward, perhaps, instead of relying solely on social
3 vulnerability indices, maybe using communities-at-sea data, and I
4 was just curious if those data exist yet for the Gulf, at least in
5 the same way they do in the Northeast, or maybe the Mid-Atlantic,
6 and so that's the first question I had.
7
8 Then the second is I was curious, and maybe I just kind of missed
9 this, or a misunderstanding of the method a bit, but I was curious
10 if you could speak to how some of these simulation results -- Have
11 you been able to -- Have you been able to groundtruth them, or
12 there's been sort of natural experiments that you could compare
13 them to, to see how well they are reflecting some of these
14 behaviors you're seeing? Thanks.
15
16 **DR. PERRUSO:**   I will take this first, Shay.   The only
17 groundtruthing that I'm aware of is what I mentioned that Dr.
18 Karnauskas and Dr. McPherson and their line of research with
19 ethnographic interviews regarding the 2018 red tide event, and
20 they have become extremely valuable, I think, especially when
21 you're trying to isolate a single event to place the displacement
22 effects strictly on one factor.
23
24 I am not aware if -- I don't think we've really groundtruthed any
25 of the behavioral studies, but I think, in listening to the results
26 of the regulatory transition, the Watson et al., as far as what
27 happened to the fleet, I think we've seen that real time, that
28 those -- In general, those results have borne out, and they're not
29 necessarily surprising, given the after effects of the IFQ program.
30
31 The first question, to be honest with you, I'm not very familiar
32 with communities-at-sea, and I don't believe -- My supervisor,
33 Matthew McPherson, is much more knowledgeable about that, and I
34 don't believe we have the data that would be available in the
35 Northeast, but the idea is to somehow link maybe consistent fishing
36 grounds that a certain community would visit the most and be able
37 to link revenue displacements back to it, and it's not really
38 something that I am very familiar with, but I don't believe we
39 have specific data in the Southeast for that. Shay, did you have
40 anything on the groundtruthing?
41
42 **DR. O'FARRELL:** Slightly on the groundtruthing, all of the oil
43 spill modeling itself was done with basically Harris's
44 connectivity modeling system, and I know the 3-D oil transport
45 model itself, I'm pretty sure, has been groundtruthed quite a lot,
46 but you're right that, in terms of the actual social aspects of
47 it, we didn't actually have any opportunity to groundtruth for
48 those particular results, because, again, as you said, they were

1 simulations, and so it's hard to groundtruth them.
2
3 In terms of the communities-at-sea, and so a piece of work that
4 we're actually involved in at the moment is planning for
5 aquaculture, and the work that we've been doing for that is
6 basically mapping is kind of revenue flows from the sea back to
7 land, and basically, if you lose a certain area of the sea, because
8 you're closing it to aquaculture, where does that money flow stop,
9 and where would it have gone to, and the communities-at-sea is
10 certainly an extension of that idea, in a revenue aspect, where
11 we're actually looking at flow the other way. It's basically how
12 does the money flow from the sea to the land, and, basically, where
13 does it end up, and so communities-at-sea will be -- We'll be
14 building on that work.
15
16 **DR. FAIRBANKS:** Thanks, and sorry, but just briefly, I think that's
17 really interesting, and I just suggest, I guess, and it sounds
18 like you are kind of pursuing down this line, but I find the
19 communities-at-sea data can be interesting, and not strictly for
20 that connection of revenue to communities, but especially when
21 it's enriched with qualitative data, and you can get some
22 interesting and very useful information on sort of the non-economic
23 relationships and values that are important to these types of
24 fisheries-dependent communities, whether it's labor relationships
25 or what have you.
26
27 I would -- I might shoot one, or both of you, an email, and I'm
28 kind of curious some of those future directions, because I think
29 it could really enrich some of this information for management
30 decision-making. Thanks.
31
32 **CHAIRMAN NANCE:** Thank you. Ava, to that point?
33
34 **DR. AVA LASSETER:** Thank you. I did just happen to look on the
35 webinar, and I do see that Matt McPherson is logged on, and, Matt,
36 if you would like to speak up regarding the SOVI data, but my
37 understanding of the dataset is that, currently, yes, this has
38 been aggregated to the county level, rather than to individual
39 communities, and kind of because of that gentrification process
40 that we have along our coast.
41
42 Also, I believe these data are probably coming from the Census
43 Bureau data, and it would be poverty and population composition,
44 and population disruption would be the indices going into it, and
45 one more point, and I believe that this has been refined, right
46 now, to be released later this year, and Lisa Colburn, from the
47 Northeast Fisheries Science Center, has been working with a
48 contractor to get more refined Census Bureau data that is more

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1   specific to the fishing components of the local economy, and did
2   I hear Matt chime-in there? Basically, we're in a process of
3   refining and improving the data that's going into these social
4   vulnerability analyses.
5
6   **CHAIRMAN NANCE:** Matt, are you available?
7
8   **DR. MATT MCPHERSON:** Yes. I wasn't aware that I could chime-in,
9   and we're very interested in the communities-at-sea issue, and,
10 actually, Larry and Shay didn't mention yet, but we actually had
11 a conversation about this yesterday, and we don't have anything
12 right now that matches what the Northeast has done, but we're
13 looking at the work that they've done, and we're trying to see how
14 we can begin to work on that and more or less replicate, or do
15 something similar, to what they've done up there, and so it is
16 something that is very much on our radar.
17
18 I don't know what the other question is, and we've been working a
19 lot on using these social indicators that I think Ava did a pretty
20 good job summarizing, but we're trying to take the social indicator
21 information that we have and make it more useful, in terms of
22 linking specific communities to the activities that are going on
23 at-sea, and so these are things that we are definitely interested
24 in paying attention to, and it's something that has come up very
25 much in the discussion about establishing these wind energy areas
26 and who is going to be impacted, what communities and so forth,
27 and so it's an important topic for us to work on.
28
29 **CHAIRMAN NANCE:** Thank you. Dave.
30
31 **DR. CHAGARIS:** Thank you for the presentation, guys. This was a
32 really neat study, and very comprehensive, and I appreciate that
33 you carried the models all the way through to some application and
34 management advice, or potential advice, and I guess what I'm
35 thinking about is where does this fit in, and I can see maybe a
36 few places within the SSC and the single-species management
37 framework, especially with the red snapper research track
38 assessment coming up, and we have all these questions about spatial
39 distribution of fish versus effort, but, also, another venue where
40 it could really help is with the fishery ecosystem plan, which is
41 -- I think we have a draft document coming out soon from the
42 contractors.
43
44 Within that plan, we -- The way it's structured, in my
45 understanding, is that there would be a set of fishery ecosystem
46 issues that would be identified, and then we would have to address
47 different aspects of those issues on the fisheries, and this could
48 definitely feed into that.

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1
2   I do have a comment about the red tide analysis, and using the
3   satellite data alone might not be the best indicator of red tide,
4   and the MODIS, the normalized florescent line height metric from
5   the MODIS satellite, it measures algae blooms in general, but not
6   necessarily harmful algae blooms, and so that might be some of the
7   reasons why you might not be seeing really strong patterns in that
8   analysis.
9
10 Some of the work that we've done with the ecosystem models is we've
11 developed red tide maps that use the satellite data, but then they
12 krig the water quality data to actually get red tide severity, and
13 I believe that it has probably a more accurate representation of
14 red tide, where you don't see that big blob up in the Big Bend
15 region, like you showed in one of your maps that probably was not
16 actually red tide.
17
18 I would be happy to chat with you guys offline, if you're
19 interested, in the products that we have, and also how we can
20 potentially use some of these maps to validate spatial predictions
21 of fishing effort with the ecosystem models that we currently have
22 and are also being developed, and so I appreciate all the work
23 that you presented here, and I see a lot of utility in the future
24 of this type of information.
25
26 I do have one question, and I guess you sort of touched on it
27 earlier, with Doug and Harry, as far as the data availability, but
28 what about the availability of these maps that you guys have
29 generated just from the random forest model. Are those publicly
30 accessible, and at what spatial and temporal resolution would they
31 be accessible, if they are? Thank you.
32
33 **DR. PERRUSO:** Shay, do you want to talk about the resolution on
34 the maps? The only publicly-available maps that we've provided
35 are either in the AOA Atlas or in these papers that are in this
36 folder.
37
38 **DR. O'FARRELL:** In terms of the red tide data, Dave, if you have
39 other red tide data that you think are better, that would be
40 terrific to talk further about that, and that's very interesting,
41 and so I would very curious to see how that would affect the
42 results, because we spent a lot of time actually in the data
43 looking at the results and being surprised that we were struggling
44 to find results, and so, yes, by all means, if you want to shoot
45 us an email and have a chat sometime, and that sounds really
46 interesting.
47
48 **DR. CHAGARIS:** Will do. Thank you.

```
 1
 2  CHAIRMAN NANCE:  Okay.  Thank you.  Trevor.
 3
 4  MR. MONCRIEF:  Thank you.  I just had a quick -- I am going to
 5  string it together, and so I'm trying to have a thought process
 6  here, and I want to string it together and just get a response and
 7  see what you all are thinking, and so, a couple of meetings ago,
 8  we were presented some information on the utility of oil platforms
 9  for various species, and, of course, there was differences amongst
10  the species, but, linking back to your fine-scale resolution of
11  artificial structures, I just wonder if that's something that is
12  being weighed in the discussion of the wind farms with BOEM and
13  everything else.
14
15  There will be impacts across fleets, as you all well know, and
16  some of those impacts may be positive, and some of those impacts
17  may be negative, and I'm just wondering if you all are thinking
18  about looking at the distribution of their oil platforms and their
19  use among fleets over time and how that has shifted with the
20  decreasing oil platforms and if you're kind of weighing that with
21  the placement and the distribution of these wind farms, and that's
22  just kind of a thought process that I had on this one, but great
23  presentations, and this shows excellent utility.
24
25  DR. PERRUSO:  Thank you.  We're not actually doing the siting for
26  the wind farms or the aquaculture sites, but we provide the
27  aggregated fishing points, predicted fishing points, and so I
28  imagine that they would be overlaying all of their data layers
29  with artificial structure and changes over time and natural
30  structure, but they would have that information of where fishing
31  is taking place, and so I think, in some way, BOEM will use that
32  information, as NCOS did, for the aquaculture siting.
33
34  MR. MONCRIEF:  I've got you, and just a quick question, and I know
35  it's a multi-agency and multifaceted approach here, with a lot of
36  moving parts, but do you know if the impacts are viewed as negative
37  impacts, or are they just positive and negative impacts that are
38  just using the same vocabulary?
39
40  DR. PERRUSO:  I am not sure how they're going to do it, but we
41  would not show displacement at this point to them, but we would
42  just show where fishing effort is taking place.
43
44  MR. MONCRIEF:  Okay.  Thank you.
45
46  CHAIRMAN NANCE:  Thank you, Trevor.  Lee Anderson, please.
47
48  DR. ANDERSON:  Thank you.  I would like to thank you guys for a
```

1 very, very interesting paper, and it's always good to hear a little
2 economics, and I want to change the framework a little bit, because
3 I went in and downloaded all the papers, and I believe there were
4 eight of them, and yet you have a team there that seems to be
5 pretty much the same, although they change over time, and my
6 question is what was the motivation to get you guys together?
7
8 You're a big group, and you've done, I think, excellent work, and
9 it takes a whole bunch of people, and so I am just curious, from
10 the point of view of getting more economics work done, and, also,
11 I find that, over in the history, if you see a big team on a deal,
12 and I don't think this is a judgment either way, a lot of biology
13 papers have a team on them, and economics paper often will have
14 one or two or three, but here is an economics thing that has gotten
15 big, and its interdisciplinary.   I mean, can you guys talk a
16 little bit about the motivation of this work?
17
18 **DR. PERRUSO:** I will start first, and then Shay probably actually
19 has a much better opinion on that, and I was actually brought in
20 by Alan Haney at the Alaska Science Center, and this was related
21 to a lot of the work that he was doing in Alaska, and so I kind of
22 got lucky, I guess, and, since I was dealing with the logbook data
23 at the Science Center for the Social Science Research Group, I
24 just found that naturally it filled in with the group, and Shay
25 can probably tell you more about how it started between Alan and
26 the University of California Davis folks and how Steve Murawski's
27 group at USF, and then you can see that some of the folks over at
28 the University of Miami have joined in as well, and so, Shay, do
29 you want to add anything?
30
31 **DR. O'FARRELL:** I guess some of those original relationships really
32 started before I joined, and that would have been 2015, and so I
33 know that Jim Sanchirico has been working with Alan Haney and Steve
34 Murawski for some time, and, I said, I'm a biologist originally,
35 but I've been interested in movement ecology, and where I got
36 involved is I was interested in Honduras, and, in fact, in vessel
37 movement in Honduras and applying movement tools to that, and I
38 knew Jim Sanchirico through my PhD advisor, and we got talking.
39
40 Jim, as an economist, was also interested, and, obviously, Steve
41 Murawski is a biologist that was interested in what we could do
42 with, again, fisheries data and movement data and apply some of
43 these models to fishing movement, and it kind of snowballed from
44 there, and, obviously, Larry had relationships with Jim before
45 that, and so it's a great question, and I'm not even sure of the
46 first origin of it, but I agree with the interdisciplinary aspect
47 of it, and it's been great having economists and biologists and
48 oceanographic modelers all working together. It's been very usual,

1 and it's been great to have all of those different perspectives.
2
3 **DR. ANDERSON:** Thank you. I just really want to say that it's
4 great work, and I haven't read all eight papers, but I have gone
5 through them, and I think there's a lot there, and a lot more to
6 come out. Thank you.
7
8 **DR. PERRUSO:** Thank you.
9
10 **CHAIRMAN NANCE:** Thank you, Lee. John.
11
12 **MR. MARESKA:** Larry and Shay, thank you for the presentation, and
13 so I was looking at Slide 18, where you've got those pings per
14 set, and, Larry, I guess I was wondering if you could possibly
15 speak to the application or limitations of potentially overlapping
16 all this fishery dependent information with fishery-independent
17 surveys that are done by the states or National Marine Fisheries
18 Service, to help explain differences or fluctuations in the
19 fishery-independent indices that are used in stock assessments,
20 and also kind of explain where we have incongruencies with what we
21 see in stock assessments, versus what the communities are reporting
22 back to us with anecdotal information.
23
24 **DR. PERRUSO:** That's a tough question, for sure, and I am not sure
25 that I am the best one to answer that. I can tell you that this
26 is kind of our starting point with this research, and we've been
27 fairly limited to the trip-level socioeconomic panel and the VMS
28 data and our linkages to that base dataset, and so we've -- We are
29 exploring economic data, and there's a whole other line of research
30 that I am doing with Dr. Quinn Weninger related to the stock
31 assessment improvement and EBFM management, and we tried to address
32 a lot of the shortcomings of endogenous fishing decisions and at-
33 sea and observers not being able to see a stock and full knowledge,
34 and so, in my opinion, and this is just a general statement, and
35 not really specific to Gulf reef fish stock assessments, but any
36 more data that we can incorporate should be beneficial, but we
37 also don't want to get bogged down into too much data, I suppose,
38 and too fine-scale of movements, and so I am not sure the best one
39 to answer that question, but hopefully that gave you a little
40 insight into at least my viewpoint.
41
42 **MR. MARESKA:** Yes. Thank you. I guess one of my concerns was
43 that we get -- You know, we've got an indices at the end of a
44 terminal year of a stock assessment that has jumped up
45 dramatically, and just trying to have a way to gauge whether that
46 increase is real or all of the survey data was excluded from where
47 the fishery was operating, and so therefore we're getting not a
48 true index of what the stock is actually doing, and so thank you

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1 for your answer.
2
3 **DR. PERRUSO:** Just a follow-up, and my hope definitely is that we
4 can start integrating this type of research into the stock
5 assessments, and I'm not sure if we can do it at the multispecies
6 level, but that's where I'm hoping we can go with this, and,
7 obviously, it's not going to be a cakewalk, but, you know, any
8 ideas from the SSC or stock assessment folks are always welcome.
9
10 **CHAIRMAN NANCE:** Thank you. Mandy.
11
12 **DR. KARNAUSKAS:** Thank you, Chair, and thanks, Larry and Shay, for
13 a great presentation. I wanted to bring up something related to
14 Dave's point earlier and how do we use this information in
15 management, and I think this is really -- It gives us a lot of
16 insights that we didn't have before, and I agree with Dave that
17 the red snapper research track assessment and the fishery ecosystem
18 plan might be potential avenues for actually using this information
19 in management, but I kind of wanted to push the SSC to think about
20 how this -- What are the on ramps of this information for the
21 management process.
22
23 I think one of the big things that I take home from this body of
24 work that Larry and others have done is that a lot of these
25 disturbance events can lead to consolidation of the fleet and/or
26 variable responses, and we had the example where they looked at
27 the fleet that had the sort of three types of strategies, or types
28 of vessels, and, in one of those groups, 60 percent of the vessels
29 exited the fishery following a disturbance, whereas another group
30 didn't have such an exit.
31
32 I think these are important responses, and potentially predictable
33 responses, and, again, just a question to the SSC to encourage all
34 of us to think about how we might bring some of this into
35 management. Thank you.
36
37 **CHAIRMAN NANCE:** Thank you. I think that's what the key is, is to
38 think about how we can bring these types of efforts into our
39 assessment analyses to be able to make more informed conclusions.
40 Larry and Shay, thank you very much for the presentation. I
41 enjoyed it very much, and, Mandy, thanks for bringing this to our
42 attention. Harry.
43
44 **MR. BLANCHET:** I appreciate Mandy's comment. To me, this goes
45 back to what the SSC role is in the review of some of the
46 amendments, and, to me, a lot of this analysis is perfect to be
47 used to try to improve some of the economic assessments, or social
48 assessments, that go into some of the management options and could

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1 be useful, very much so, but would require, certainly, in the first
2 several passes through an amendment, would need some good, careful
3 review by the SSC, so that there was not a perception that this
4 was just an additional scientific obfuscation of what's going on.
5
6 I really like the process, and you heard my concerns regarding
7 confidentiality, but, beyond that, I do believe that this has got
8 some real value in trying to do a better job of characterizing
9 some of these impacts. I am hoping that we will be able to
10 incorporate some information, in the future, on some of the charter
11 fleet, as some of that additional information comes online in the
12 future. Thank you.
13
14 **CHAIRMAN NANCE:** Thank you, Harry. You know, it's important, I
15 think, that the actual data is being used in the model, and that
16 is important, and then, for presentation purposes, we actually can
17 aggregate that and put it out into a manner that you're not looking
18 at individual vessels. Lee.
19
20 **DR. ANDERSON:** I will be brief. Jim, in one of your final
21 sentences, you said this will be useful for stock assessment, and
22 I think it will, but I think -- I don't want that to be the take-
23 away message. I think the take-away -- Just as an important take-
24 away message is this will enable us to understand the impacts of
25 various regulations and help us build better management.
26
27 **CHAIRMAN NANCE:** Absolutely, and I appreciate that comment. I
28 always look to you for good advice on these things, and thank you
29 for always doing that. Let's go ahead and take a fifteen-minute
30 break, and we'll come back at 10:50.
31
32 (Whereupon, a brief recess was taken.)
33
34 **CHAIRMAN NANCE:** We will go ahead and start, and Ryan is going to
35 go over the scope of work with us. Ava, would you go over the
36 scope of work, and then, Dr. Lasseter, we'll go ahead and have
37 your presentation. Thank you.
38
39 **DR. LASSETER:** Perfect. Thank you very much. Okay, and so this
40 agenda item -- I'm sorry. I will pause for just one moment.
41
42 **CHAIRMAN NANCE:** Steven, do you have a question?
43
44 **DR. SCYPHERS:** Yes, sir, and I had my hand up, and sorry, and I
45 didn't mean to interrupt. Over the break, a few of us were just
46 chatting about the last presentation, and, in response to Dr.
47 Karnauskas' kind of request to think about integration to
48 management, I sent a motion to the meetings email right at the end

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1 of the break.
2
3 **CHAIRMAN NANCE:** Okay. Before we start this next section, Steven,
4 thank you for bringing that to our attention, and so let's go ahead
5 and bring that motion up. Okay, and so let me read the motion.
6
7 **The SSC recommends further developing and expanding the modeling**
8 **efforts and analyses to understand the social and economic**
9 **implications of fisheries disruptions. The SSC also recommends**
10 **further exploring direct pathways to integrate these models and**
11 **similar types of social and economic data into stock assessments**
12 **and management procedures.** Dr. Scyphers has given us this motion.
13 Do we have a second for it?
14
15 **DR. POWERS:** I will second it.
16
17 **CHAIRMAN NANCE:** Sean, thank you. Is there discussion? I think
18 it's a great motion, and I think it adds to the discussion that
19 we've had and allows us to let the council know what our
20 recommendations are for these modeling efforts. Jason.
21
22 **MR. ADRIANCE:** Thank you, Mr. Chairman. I was wondering, given
23 that we discussed some of this in terms of potential increases in
24 quota, in particular with red snapper, should we limit it to
25 disturbances, or disruptions I mean, and I'm sorry, or maybe a
26 little more broad than that, to be able to incorporate any sort of
27 changes, whether it's a disruption or a, for lack of a better word,
28 reallocation. Thanks.
29
30 **CHAIRMAN NANCE:** Stephen, to that point?
31
32 **DR. SCYPHERS:** Yes, sir. Thank you, Mr. Chair. Jason, that's a
33 great point, and it's actually something that I was chewing on
34 when writing it, and I was thinking about the majority of the
35 examples in the presentation were disruption related, but I agree
36 with you, and I definitely support, I think, the spirit of
37 broadening it to increasing scenarios as well, and so I don't know
38 if we just want to go with your suggested terminology there or --
39 I am open to suggestions on the phrasing, but I definitely support
40 it, if Dr. Powers, who seconded it, does as well.
41
42 **CHAIRMAN NANCE:** What should we put in there? Jason, do you have
43 something that we can put in there?
44
45 **MR. ADRIANCE:** I don't know if I have something, and I don't know
46 if I want to use the word "reallocation", but maybe just "economic
47 implications of fisheries", and I don't know, and "changes" seems
48 too broad, but --

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1
2 **CHAIRMAN NANCE:** What about "impacts"?
3
4 **MR. ADRIANCE:** Yes, that sounds good.
5
6 **DR. SCYPHERS:** Mr. Chair, I have a suggestion, if it aligns with
7 what Jason is thinking, and so, in the first sentence, at the end,
8 implications of fisheries disruptions, we could add, after
9 "disruptions", "and other abrupt changes", and that's kind of a
10 broad umbrella to when these types of analyses or models could be
11 useful, and would that get at what you're hoping for, Jason?
12
13 **MR. ADRIANCE:** I think so, but I will definitely let others chime-
14 in, if there's a better way to say that a little more eloquently.
15
16 **CHAIRMAN NANCE:** Sean, are you okay with that change?
17
18 **DR. POWERS:** Yes. No problem.
19
20 **CHAIRMAN NANCE:** Thank you. Jason, thank you for that. Luke.
21
22 **DR. FAIRBANKS:** Thank you. I was wondering if, in the first
23 sentence, the modeling efforts and analyses, if we could maybe
24 clarify that. Based on the presentations and discussion, it seems
25 like there is interest in kind of moving beyond just the models,
26 or the simulations, and including some complementary data types
27 and analyses, and so I don't know if "modeling efforts and
28 analyses" are -- If the analyses are meant to be separate or if
29 it's also modeling efforts and modeling analyses, and, if it's
30 supposed to be the latter thing, I guess I would clarify that we
31 maybe would want to consider other types of similar complementary
32 analyses here, and so I don't know -- Maybe I'm the only one that
33 is unclear about that, but I just wanted to bring it up.
34
35 **DR. SCYPHERS:** I think that's also a good point, and my intent was
36 for it to be broad enough for it to encompass all of the analyses
37 that were shown, and also some of the ones that were mentioned as
38 ongoing, like the other ways of kind of drilling down at community-
39 level social vulnerability, so that those -- This would not be
40 restricted to what's currently available. If we wanted to add
41 "other", or "complementary", in front of the word "analyses", I
42 would be fine with that if that would align with what you're
43 thinking, Luke.
44
45 **CHAIRMAN NANCE:** I think "complementary" adds a good adjective
46 there.
47
48 **DR. FAIRBANKS:** I think that would be good. If that was the intent

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1 there, I'm totally onboard, but I do think maybe just an adjective
2 could clarify it, and "complementary" may work, if others agree.
3
4 **CHAIRMAN NANCE:** David, did you have a comment to that point?
5
6 **DR. GRIFFITH:** Yes, and I was just saying that we could just reduce
7 it from "modeling efforts and analyses" to "expanding the research
8 to understand", or "studies" or something like that.
9
10 **DR. FAIRBANKS:** I don't think that that's a bad idea, but I just
11 wasn't sure if wanted the motion to kind of be attached more
12 specifically to the previous presentations that we saw.
13
14 **CHAIRMAN NANCE:** This certainly takes it to a lot more generalized
15 statement, and so I guess, from the motion makers, do you want it
16 to be generalized like this, or do you want it to be specific in
17 relation to the presentations that we've seen?
18
19 **DR. SCYPHERS:** I think my preference, in this case, which we can
20 always have a substitute motion, but my preference would be for it
21 to retain the mention to the modeling that we saw in the
22 presentation, because it was so well done and directly thought out
23 on how it could be applied to disturbance and various scenarios,
24 and so I wouldn't want it to lose the connection to the work that
25 we saw today, if that is okay with others, and, obviously, we could
26 see if there's a substitute, if folks felt otherwise.
27
28 **CHAIRMAN NANCE:** I think it goes further back than that, Jessica.
29 Keep going. Then "complementary analyses". Okay. I think that's
30 where we had ended it. Luke, thank you for that. Rich.
31
32 **DR. WOODWARD:** Complementary with an "e", rather than an "I".
33
34 **CHAIRMAN NANCE:** Yes.
35
36 **DR. WOODWARD:** As we're correcting the spelling, I had a couple of
37 thoughts.   One is I have a question about what we mean by
38 "developing and expanding", and should we say "supporting" or
39 "encouraging" or that type of thing? I don't know whether that is
40 what we have in mind or that's what is available. Then I'm thinking
41 grant programs and cooperative agreements, along the same lines of
42 this, but sort of expanding the scope outside of the government
43 and reaching -- Facilitating and encouraging research by academics
44 more broadly, and so I don't know whether that is what is intended,
45 or is even desirable.
46
47 On the modeling efforts, I would just say that the terminology
48 that they use -- "The movement analytics", instead of "the modeling

effort", just to be more specific, and "the use of movement
analytics and complementary analysis to understand", et cetera, et
cetera, and so "the modeling efforts" seems a little bit vague,
and we all know what we're talking about, but, when somebody reads
it out of context of this presentation, they probably won't.

DR. SCYPHERS: I think there is some really good suggestions there,
and so, if it is okay, I will suggest some slight rewording of the
first part.

CHAIRMAN NANCE: Go ahead, Steven.

DR. SCYPHERS: The first sentence can go, "The SSC supports and
recommends further development", so that it's clear that we support
what we've already seen, "and recommend further developing", and,
Rich, I might ask you, if you don't mind, restating what you said
about the spatial movement, because I am happy to add that
clarification in as well.

DR. WOODWARD: Instead of saying "the modeling efforts", say "the
use of movement analytics".

CHAIRMAN NANCE: Yes. Okay. Richard, thanks for that. Jim Tolan,
please.

DR. TOLAN: I yield, Mr. Chair. The first amendment that was
offered up by Jason covered the point that I was going to bring
up, but I will certainly support this motion. Thank you.

CHAIRMAN NANCE: Thank you very much. Paul, please.

DR. MICKLE: Thank you, Mr. Chair. I just had a couple of things.
I enjoyed the presentation, and I support the motion, and I really
don't have any changes to the motion specifically, and just a
couple of points, but I had a couple of questions about the
presentation, but I actually answered them myself by pulling your
first manuscript that you cited in the presentation, and so it was
a well-written paper, and I like when methods are fleshed out well
in a manuscript as well, and so, skipping that, I will move on to
the motion.

I just wanted to make sure that the SSC is, in this motion, is --
Are we recommending it for all the EEZ or all around the country,
or are we going to pigeon-hole ourselves to the Gulf of Mexico? I
would recommend we're all -- I guess most of us are Gulf-based,
and I would feel more comfortable if we recommend it for the Gulf
of Mexico, because I don't know much about the fisheries outside
of the Gulf.

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1
2 When I do, when I try, I learn a lot, but I just don't know if
3 this will work in other areas, and I'm not educated enough in those
4 other regions to know if this will work or be able to be done, and
5 I don't even know how those commercial fleets actually operate.
6
7 Then the other one is just a recommendation for the developers,
8 and it's a great job so far, and just, personally, I would
9 recommend attendance to some of the SEDAR data workshops, and even
10 the APs, which you may have already done, but, as this moves
11 forward, I think the data workshops is probably the best bang for
12 the buck, just because you really hear and understand the SEDAR
13 process of how valuable the data is and how this potential output
14 data could incorporate within a stock assessment proper, within a
15 metric value.
16
17 Then the socioeconomics I think will spawn out of that on its own,
18 with some of those conversations of the outputs of some of these
19 machine learning processes, and so that's all I've got, Jim, and
20 I appreciate it, and I fully support the motion. Thank you.
21
22 **CHAIRMAN NANCE:** Thank you. Will Patterson, please.
23
24 **DR. PATTERSON:** Thanks, Mr. Chair. My comment has kind of been
25 addressed here, with the change in language to "movement
26 analytics". However, I was going to put forth a friendly amendment
27 to -- The previous language said "modeling", and I would just add
28 "spatial fishery modeling", and I think that's more specific than
29 "movement analytics", in any case, but "movement analytics" does
30 capture some of that, but I also think we need to reference the
31 presentation here, or the work by Perruso and O'Farrell, and so if
32 "use of spatial fishery modeling and complementary analyses
33 presented by Doctors Perruso and O'Farrell", and I think that puts
34 it in the correct context, as a friendly amendment.
35
36 **CHAIRMAN NANCE:** Okay. Thank you. Steven and Sean, are you okay
37 with that change?
38
39 **DR. SCYPHERS:** Absolutely. Thank you, Will.
40
41 **DR. PATTERSON:** No problem.
42
43 **CHAIRMAN NANCE:** Okay. Thank you. Dr. Anderson.
44
45 **DR. ANDERSON:** My points have been covered. Thank you.
46
47 **CHAIRMAN NANCE:** Thank you, sir. Rich.
48

DR. WOODWARD: I just wanted to say that "spatial fishery modeling" is fine, but I think spatial modeling -- I thought about that first, and thought it may be too general and not really getting into the type of temporal and spatial very explicit modeling that's done here, but, by referencing Perruso and O'Farrell, I think we've covered that very well.

CHAIRMAN NANCE: Okay. Thank you. We'll go ahead and take this motion to a vote. I am going to read it. **The SSC supports and recommends further developing and expanding the use of spatial fishery modeling and complementary analyses presented by Drs. Perruso and O'Farrell to understand the social and economic implications of fishery disruptions and other abrupt changes. The SSC also recommends further exploring direct pathways to integrate these models in similar types of social and economic data to stock assessments and management processes. Any opposition to this motion?**

DR. WOODWARD: I have a quick suggestion, and clearly I read it again, and "complementary analyses", but "along the lines presented by Drs. Perruso and O'Farrell, and we don't really want to say give them as much money as possible, and I don't think that's the intent.

CHAIRMAN NANCE: Okay. I think that's a good suggestion, and so complementary analyses along the lines of that presented". Perfect. Okay. **Do we have any opposition to this motion, as presented here? Hearing none, the motion passes without opposition.** Dr. Scyphers, thank you for making that motion. I think it carries -- It was well received. Mandy.

DR. KARNAUSKAS: Thank you, Mr. Chair. I think that I will abstain from this. I was peripherally involved in some of the work, and I can't recall the specific COI guidelines, but I will abstain. Thank you.

CHAIRMAN NANCE: Okay. Thank you for letting us know that. Let's go ahead and move on to Agenda Item Number XII. Harry.

MR. BLANCHET: Mr. Chairman, I had a follow-up motion to this one.

CHAIRMAN NANCE: Okay.

MR. BLANCHET: It's very simple. **The SSC requests that instances where this line of analysis is being used within fishery management amendments that the analyses be reviewed by the SSC prior to public promulgation, or whatever the correct term is, and somebody help me from the council.**

1
2 **UNIDENTIFIED:** Maybe "management consideration"?
3
4 **MR. BLANCHET:** That works.
5
6 **CHAIRMAN NANCE:** Do we need to specify "this line of analysis" or
7 somehow refer to the other motion? Go ahead, Ryan.
8
9 **MR. RINDONE:** Thank you, Mr. Chair. I think I might be able to
10 help, and, Harry, let me know what you think. **The SSC requests**
11 **that, in instances when these spatial fishery modeling analyses**
12 **are used to inform management alternatives in fishery management**
13 **plan amendments, that these analyses first be reviewed by the SSC**
14 **prior to council consideration.**
15
16 **MR. BLANCHET:** Perfect. Thank you.
17
18 **MR. RINDONE:** Okay. I thought that's what you were going for, but
19 I wanted to try to frame it similar to the language that we
20 typically use, and that was all.
21
22 **CHAIRMAN NANCE:** Thank you, Ryan. Harry, you're fine with that?
23
24 **MR. BLANCHET:** **I am.** These are the times when I miss Bob Gill.
25
26 **CHAIRMAN NANCE:** Do we have a second for this motion?
27
28 **MR. MONCRIEF:** I will second it.
29
30 **CHAIRMAN NANCE:** Thank you, Trevor. Lee Anderson.
31
32 **DR. ANDERSON:** Well, I kind of have a mixed feeling about this,
33 because sometimes, when you get in a hurry to get something done,
34 and I'm speaking as a former council member here, and it says that,
35 oh, we can't do it, because it hasn't gone to the SSC, and I would
36 just hope that it is put somewhere that the SSC reviews these
37 things, as a matter of course, but to say it has to be done before
38 it can go forward, you're just handcuffing -- You have a
39 possibility of handcuffing the people that are trying to get work
40 done.
41
42 **MR. RINDONE:** You could add "when possible", at the end.
43
44 **CHAIRMAN NANCE:** Or you could take out that these analyses be
45 reviewed by the SSC -- If you took out the term "first", I think
46 that would -- Would that satisfy that issue, Lee?
47
48 **DR. ANDERSON:** Or "where possible".

1
2 **MR. BLANCHET:** To Lee's point, the development of a fishery
3 management plan is a long process, and, except for an emergency
4 situation, I don't see a time where it would be appropriate to
5 insert a relatively novel method of analysis into an amendment and
6 not have it reviewed by the SSC, and that is my concern here, is
7 that there has been often cases where we have a fishery management
8 plan come forward, and it gets presented at an early stage to the
9 SSC, and additional analyses get done before the plan is finalized,
10 but the SSC is not seeing it again, and, if some of these analyses
11 are done, I want to be sure that it has the validation of having
12 gone through the filter of our review, so that it's not seen as
13 being something that is less complete than it would be otherwise.
14 If we were dealing with, you know, a new method of reporting
15 landings, or anything else, then I would have the same sort of
16 concern. Thank you.
17
18 **CHAIRMAN NANCE:** Harry, do you want to take out the term "where
19 possible"?
20
21 **MR. BLANCHET:** I would prefer to, yes.
22
23 **CHAIRMAN NANCE:** Okay, and so that's the way that -- Trevor, are
24 you okay with that?
25
26 **MR. MONCRIEF:** Yes, I'm fine. I mean, the key thing here is that
27 it's specifying, with Ryan's changes, management alternatives and
28 fishery management plan amendments, and plan amendments take time,
29 and there is opportunity there to be able to fit it in.
30
31 **CHAIRMAN NANCE:** Okay.
32
33 **DR. ANDERSON:** Well, I can see where you're coming from, and so
34 you're right that it is a long process, but I remember being held
35 up sometimes when I was on the Mid. All right. I guess I'm done.
36 Thank you.
37
38 **CHAIRMAN NANCE:** Okay. Thank you, Lee. Sean.
39
40 **DR. POWERS:** My first comment was going to be that, while I support
41 the motion and agree with it, I didn't really think that it was
42 necessary, and of course we would be given an opportunity to talk
43 about any analysis and give some opinion on that, but, in reading
44 it, actually, it dispelled that myth of me, that sometimes the
45 council may have to or want to act without our input, and so now
46 I actually understand the rationale better of Harry's motion and
47 support it.
48

1 **CHAIRMAN NANCE:** Thank you. Thanks, Lee. Okay. Trevor.
2
3 **MR. MONCRIEF:** My comment was covered. I'm good.
4
5 **CHAIRMAN NANCE:** Okay. Thank you. Any other comments or
6 discussion? Let me read the motion. **The SSC requests that, in**
7 **instances where the spatial fishery modeling analyses are used to**
8 **inform management alternatives and fishery management plan**
9 **amendments, that these analyses be reviewed by the SSC prior to**
10 **council consideration. Any opposition to this motion? Hearing**
11 **none, the motion passes without opposition.**
12
13 Thank you for these two motions. Now we'll go ahead and start
14 Item Number XII, and we need to have the scope of work presented.
15 Ava will go ahead and present that, and then, Dr. Lasseter, you
16 can go ahead and start your discussion.
17
18 **REVIEW AND DISCUSSION: NATIONAL ACADEMIES OF SCIENCES REPORT ON**
19   **THE LIMITED ACCESS PRIVILEGE PROGRAMS IN MIXED-USE FISHERIES**
20
21 **DR. LASSETER:** Sounds good. Thank you. Here is our scope of work
22 for the next item, and we are going to briefly revisit the National
23 Academies of Sciences report on the use of LAPPs in mixed-use
24 fisheries, and so you did receive a presentation from Lee Anderson,
25 at your last meeting, on the report, and he was a member of the
26 committee, as was Dr. Powers, and, after the presentation was done,
27 some committee members, some SSC members, excuse me, were
28 discussing their interest in further considering and exploring the
29 study's recommendations, and so we have brought those
30 recommendations back to you.
31
32 I am going to kind of review the recommendations broadly, where
33 they are in the report, and you may recommend that one or more of
34 these be prioritized, or you may wish to comment on the feasibility
35 of one or more of them, as you feel is appropriate, and so we'll
36 move over to the document, and it is a Word file, rather than a
37 presentation, because there are so many words in it, and it would
38 have been a very busy PowerPoint.
39
40 This document includes primarily just the recommendations and a
41 little bit of extra text around some of those recommendations,
42 and, again, as a reminder, this study was mandated by the
43 Modernizing Recreational Fisheries Management Act, which was
44 approved on the last day of 2018, and many of the recommendations
45 from the report are particularly policy oriented, and so those are
46 going to be more appropriately directed to the council, and many
47 of these also concern data collection and research, and you can
48 find kind of components of both of them mixed between.

1
2   The report's summary chapter, right in the beginning, provides a
3   good bit of contextual text for each of the report's five main
4   recommendations, and those five recommendations are preceded by an
5   asterisk in this document. Each of those five recommendations are
6   repeated then in Chapter 8, addressing the impacts of LAPPs in
7   mixed-use fisheries, with some additional recommendations as well.
8
9   They are organized into five broad sections, and those are impacts
10 to recreational stakeholders, impacts to commercial participants,
11 and then impacts to fishing communities, and so all three of those
12 sets   of   recommendations   are   housed   under   a   heading   of
13 recommendations for existing and future LAPPs.
14
15 Following that, on page 4, we have the recommendations for data
16 collection and future research, and so I hope that you all had
17 some   time   to   review   these,   and   there   is   your   first   major
18 recommendation, and then there is three more on that page that
19 were   the   minor   Chapter   8   recommendations,   and,   if   you   keep
20 scrolling down, we're going to get to the SSC one here on the next
21 page, and then the final section here is the recommendations for
22 the interdisciplinary impact assessment.
23
24 At   your   January   meeting,   we   did   briefly   provide   you   this
25 recommendation up on the screen, and it's in bold of the middle of
26 the page, and then we have also reproduced the text from the report
27 for this particular section, so that you can see the context, and
28 then, before I turn this section over to the SSC for discussion,
29 I just want to highlight, on page 6, that we separated out three
30 final recommendations, just to kind of highlight them, and so there
31 was   a   recommendation   specific   to   the   five-year   review,   and   so
32 that's speaking to us staff members, both on the council at the
33 Regional Office, for us to be working to be working to improve our
34 reviews.
35
36 There was also a recommendation to NMFS to be prioritizing human
37 dimensions   research,   and   then,   finally,   one   regarding
38 congressional   funding,   because,   of   course,   all   of   these
39 recommendations really are going to warrant increased resources to
40 the region, and we're always strapped for that, of course, and so
41 let's go back up to the recommendations for the interdisciplinary
42 impact assessment on page 5, and I think this is where you left
43 off your discussion in January, and I will pause there and see if
44 there is discussion.
45
46 **CHAIRMAN NANCE:** Okay. This is our opportunity to, through motions
47 or   other   means,   to   make   recommendations   to   these   different
48 priorities and so forth, and so any discussion? David.

1
2 **DR. GRIFFITH:** I guess I would just ask if anybody -- If people on
3 the SSC object to these recommendations or are more or less in
4 line with them, and just as a matter of my own curiosity. I mean,
5 I'm in support of the recommendations that I've seen. I have
6 reviewed this report a little bit, but not recently, and not as
7 much as I should have.
8
9 **CHAIRMAN NANCE:** Benny Gallaway, please.
10
11 **DR. GALLAWAY:** The first sentence, that NMFS and the council should
12 encourage interdisciplinary and better integrate qualitative and
13 quantitative data to generate hypotheses and discern and test
14 policy impacts, I think maybe that last "and" needs to go, or
15 somehow that sentence doesn't quite read right, to me.
16
17 **CHAIRMAN NANCE:** Unfortunately, that's already in the report,
18 Benny.
19
20 **DR. GALLAWAY:** That makes it right.
21
22 **CHAIRMAN NANCE:** Well, it makes in print anyway, doesn't it? Jim
23 Tolan, please.
24
25 **DR. TOLAN:** Thank you, Mr. Chair. To the question that was just
26 asked for the general SSC sort of temperature reading on these
27 recommendations, I think, for the part, everyone is in agreement
28 with it, and this is not meant to be a flippant statement, but
29 it's kind of like saying all puppies are cute.
30
31 We have always thought that integrating the -- Finding ways to
32 integrate these other data into stock assessment has always been
33 a good idea, but it's the nuts-and-bolts of how you do it that
34 we've always kind of struggled with, and so I think these
35 recommendations by this committee is wonderful, but it's always
36 been how do you do it, and so I think we've always been in agreement
37 with it, but it's just the nuts-and-bolts of how we can turn some
38 of these sort of squishy numbers into where does it fit in SS.
39 Thank you.
40
41 **CHAIRMAN NANCE:** Jim, thank you, and I agree with that, what you
42 have stated. These are recommendations that are there, and I don't
43 see anybody that doesn't want these to go forward, but are there
44 some of these recommendations though that we feel have maybe a
45 higher priority than others?
46
47 If so, maybe we want to highlight those, because, obviously, as
48 has been stated, there's not all the money in the world out there

1 that we can use for these things, and so are there some of these
2 recommendations that have a higher priority, in our minds, than
3 others? Luiz, please.
4
5 **DR. BARBIERI:** Thank you, Mr. Chairman. Not to answer that
6 question, because I wouldn't know how to, but, basically, just to
7 put, I guess, Lee and Sean on the spot, because, when you're a
8 member of one of these committees, these studies can take sometimes
9 up to eighteen months to be developed, and they involve a lot of
10 meetings and stakeholder input and expert input into this, and,
11 usually, by the time that they get distilled into these conclusions
12 and recommendations, there has been a lot of discussion, and I
13 wonder if they want to have sort of like take-home messages
14 associated with the intent of each one of these recommendations,
15 what they are trying to achieve, because, usually, these are
16 developed with that intention of analyzing some kind of action or
17 having an expectation of a follow-up by some groups, and I am
18 wondering if they identified those explicitly.
19
20 Anyway, not to put you on the spot, Lee and Sean, but, putting you
21 on the spot, is there anything that you would like to add in terms
22 of helping us understand sort of the distilled messaging behind
23 some of these conclusions and recommendations?
24
25 **DR. POWERS:** I will go first, and Lee can definitely add, but, I
26 mean, I understand Jim's comment. I mean, first of all, these are
27 consensus statements, and so they all have to -- We all have to
28 kind of agree, and so that means the language is more general,
29 and, you know, a lot of these conclusions also just reflect a
30 consensus that fisheries folks have been talking about for a while,
31 and so they're not necessarily new.
32
33 I guess a lot of what was driving the committee was we had very
34 specific charges, but really not enough data to address those
35 charges, and everybody always wants more data, but, in particular,
36 I think the committee felt there wasn't enough thought put in at
37 the beginning of these LAPP programs into what type of data we
38 would need, or the community would need, to assess -- Fishing
39 community impacts, for example, was a big one that we really
40 couldn't see, and so there is some very specific examples about
41 following more information about crew dynamics and crew employment
42 in the body of the report, and so these are very general, but I do
43 feel a little more comfortable that we give very specific examples
44 of what type of data we would have needed to fully execute our
45 charges, but I guess that's the background that we have.
46
47 I agree with the comments before, and I don't necessarily think we
48 need any motions to reinforce this. I mean, the committee report

1 is the committee's report, but, you know, the big highlight was
2 simply what the Act was asking us to do, and the data available
3 just didn't line up, and we couldn't fully address those, and I
4 think we were very honest about that in the report, and so that's
5 why some of these recommendations are more forward looking and
6 saying that we need if you want to do this in five or six more
7 years. I don't know if Lee has a different opinion.
8
9 **CHAIRMAN NANCE:** Thank you, Sean. It just gives us an opportunity
10 here, and, while this is a general report, we need to look at it
11 from an SSC, and are there some of these recommendations that we
12 feel like, as a Gulf of Mexico Fishery Management Council SSC,
13 that have more -- That would allow help in our region, as opposed
14 to other things. Lee, anything else?
15
16 **DR. ANDERSON:** No, Mr. Chairman, and I would concur with your
17 statement. I would think that, if the SSC looked at all of them,
18 and not just the one, and say they concur, which I don't think it
19 will be a big stretch, because they are pretty homogenized, and
20 especially if you -- If there is one that looks especially good,
21 okay, say that, or, if there's one that you think we missed on,
22 but, other than that, I have nothing more to say, and I will try
23 to stay neutral in this.
24
25 **CHAIRMAN NANCE:** Okay. Thank you, Dr. Anderson. Trevor.
26
27 **MR. MONCRIEF:** Thank you, Mr. Chair, and I will step out here,
28 just to try to start a little bit of discussion, with, reading
29 through the recommendations, specifically looking at the impacts
30 to recreational participants and everything, and I stated it when
31 -- I think it was our first meeting as an SSC, or the second
32 meeting, and we had a presentation on some different ways to
33 allocate fish in the recreational sector, and, to me, that's one
34 where these recommendations -- It needs more data behind it, kind
35 of like Sean said.
36
37 The other NAS report that Luiz and Sean were a part of, looking at
38 this recreational data and everything else, to me, that's one where
39 that's going to take some time, right, because we need to work on
40 the recreational landings estimates and then get to a point where
41 the surveys are aligned and we're getting more consistent and
42 timely information, so that, when it comes down to it, if the need
43 presents itself, we can start thinking about these LAPPs and
44 everything else.
45
46 That's kind of me jumping out here and trying to stir up a little
47 bit of conversation, but, if I have one that I thought might need
48 a little bit more information to it, that might not be readily

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1 available as an option or a place to look, it would be on the
2 recreational participants' side.
3
4 **CHAIRMAN NANCE:** Thank you, Trevor. John.
5
6 **MR. MARESKA:** At the last meeting, I kind of rejected any movement
7 on it, because I really didn't understand much about the angler
8 management organizations, and, immediately after the meeting, I
9 downloaded the Sutinen et al. 2003 file and started to review it,
10 to educate myself.
11
12 Basically, I've got some concerns, and, if the council wants to
13 move in this direction, I would recommend they do cautiously,
14 because the gist behind all of this is to kind of devolve the
15 management of the recreational fisheries to these angler
16 management organizations, and the Sutinen report is basically that
17 management isn't responsive enough to the recreational fisheries,
18 and so they want to move this authority to these AMOs, but it's
19 not really spelled out how they will work and how they fit into
20 the management process and how all the accountability plays, but
21 it's sold that it will be increased accuracy in reporting and the
22 estimates, and there is also going to be additional cost -- You
23 know, implementing cost recovery programs and ensuring angler
24 rights for the recreational, and so, if you haven't read the paper,
25 I would recommend that a lot of people read it, but, for the
26 recommendations for LAPPs in the mixed-use fisheries overall, in
27 general, there is -- To me, there's not a lot to object to.
28
29 It's rather vague in its language, and so moving forward with it
30 and just cautioning the council to go slowly with all of this, and
31 we probably need to review a lot of this information, as they
32 gather information and make recommendations, or decisions, of how
33 they want to move forward with the management process, and so thank
34 you.
35
36 **CHAIRMAN NANCE:** John, very good points, and, as we've stated,
37 these recommendations are pretty generic, but, as we move forward
38 as a council, I think that's important, that we make sure that
39 it's -- That, as we move forward with these different
40 recommendations, that we make sure that it's conducive to what we
41 want to have happen. Any other comments from the SSC? This is
42 our opportunity. We had a great presentation last time from Lee,
43 and this just gives us the opportunity to highlight any
44 recommendations that we want. Harry, please.
45
46 **MR. BLANCHET:** Did John want to put his comments into the form of
47 a motion? It kind of sounded like something that he might want to
48 carry forward on more than just on page ninety-seven of our

1 minutes.
2
3 **CHAIRMAN NANCE:** I would certainly welcome any motions from the
4 SSC. Absolutely.
5
6 **MR. MARESKA:** I guess, at this point, I will think about it, Harry.
7 Most of my concerns had to do with the recreational components of
8 it, and I may put something together. Let me think about it.
9
10 **CHAIRMAN NANCE:** Okay. Thank you, John. Lee Anderson, please.
11
12 **DR. ANDERSON:** While you're thinking about it, I think that the
13 issues you raised about those organizations are well known, and
14 it's stated in the text that this is something that has been
15 established, and it's in the literature, and it should be
16 considered, and I don't think there's anything in the document
17 that says this is what should be done in every case, and so I will
18 stop there, because I said that I would try to be neutral.
19
20 **CHAIRMAN NANCE:** You're doing well. Jack Isaacs, please.
21
22 **DR. ISAACS:** It's a very interesting report, and do we know when
23 it might be ready for release?
24
25 **CHAIRMAN NANCE:** This is already released, Jack, and it's already
26 out for --
27
28 **DR. ISAACS:** I still saw draft on the copy that I was looking at.
29 That's the reason for the confusion.
30
31 **CHAIRMAN NANCE:** Okay. Ava.
32
33 **DR. LASSETER:** I can say that that's the only -- It has been
34 finalized, and it's in pre-publication, and they do not actually
35 have the hard copies of it yet, but that is the released version
36 of the report, and it is under printing still, and so hard copies
37 will be available eventually.
38
39 **DR. ISAACS:** I do appreciate that. This would be a good tool for
40 students, I think, and we're studying this in graduate school.
41
42 **DR. POWERS:** The hard copies are available now, and I got mine
43 about two or three weeks ago, the final printed version.
44
45 **CHAIRMAN NANCE:** Thank you, Sean. Do you know where it's
46 available, Sean?
47
48 **DR. POWERS:** The National Academy of Sciences site, and you can go

1 to that site and download the report, and just type in "LAPPs" in
2 the search, and it will come up. You can download the PDF for
3 free. I think, if you want the actual printed hard copy, it's
4 $40.00 or $50.00, but the final PDF is available for free.
5
6 **CHAIRMAN NANCE:** Okay. Thank you. Maybe what we can do is, if
7 there is no further comments, we'll break a teeny bit early for
8 lunch, to give individuals time to think about a motion, and we
9 can come back at quarter to one. At 12:45, we'll reconvene, and
10 we'll take this up, any motions, and then, if there's not any,
11 then we'll move on to other items. Thank you.
12
13 (Whereupon, the meeting recessed for lunch on March 9, 2022.)
14
15   - - -
16
17   March 9, 2022
18
19   WEDNESDAY AFTERNOON SESSION
20
21   - - -
22
23 The Meeting of the Gulf of Mexico Fishery Management Council
24 Standing and Special Reef Fish, Special Socioeconomic & Special
25 Ecosystem Scientific and Statistical Committees reconvened on
26 Wednesday afternoon, March 9, 2022, and was called to order by
27 Chairman Jim Nance.
28
29 **CHAIRMAN NANCE:** We're going to go ahead and start, and we're going
30 to revisit the impacts of limited access privilege programs, and
31 I think John Mareska has sent a motion that we need to entertain.
32 Jess, would you put that up for us, please?
33
34 Here is John's motion, and I will read it. **The SSC finds that the**
35 **recommendations of the National Academies of Science report on the**
36 **use of limited access privilege programs in mixed-use fisheries**
37 **are equally plausible for consideration. Additionally, the SSC**
38 **recommends proceeding with caution, as the influence of the LAPPs**
39 **on fisheries is constrained by the scarcity of data and its ability**
40 **to decrease uncertainty in fishery management is not well defined.**
41 Do we have a second for that motion?
42
43 **MR. BLANCHET:** I will second it.
44
45 **CHAIRMAN NANCE:** Thank you, Harry. Is there discussion? Jack.
46
47 **DR. ISAACS:** I am glad to see this is coming up. I want to also
48 make sure that we're not necessarily lending our approval to any

1   of the specific recommendations that are kind of mentioned in the
2   report later, things like setting aside maybe 5 percent of the
3   limit for new entries and things like that, and I think it's
4   premature to comment on specifics like that at this time.
5
6   **CHAIRMAN NANCE:** Okay, and I think this motion is vague enough
7   that it doesn't do that.
8
9   **DR. ISAACS:** Very good.
10
11 **CHAIRMAN NANCE:** Rich.
12
13 **DR. WOODWARD:** I guess I am -- The second sentence strikes me as
14 more negative than I would like to be. I mean, the idea recommends
15 proceeding with caution, but a recommendation to proceed with
16 caution also sort of can be interpreted as recommended as not
17 proceeding at all, and that's certainly not my perspective on this
18 issue, and so, if they're willing to consider an amendment to
19 weaken that, or to make it sound more supportive of the use of
20 LAPPs, with appropriate caution, that would be fine, but, as
21 currently written, I'm not happy with it.
22
23 **CHAIRMAN NANCE:** Okay. John, to that point, please?
24
25 **MR. MARESKA:** Yes, and I'm open to an amendment, but it does state
26 to proceed with caution, and I am not sure how to best rephrase
27 that sentence, but that second sentence is basically, since this
28 a carryover from the last SSC meeting, and I went back and
29 revisited the presentation that Lee Anderson gave us, and I
30 borrowed some language from his conclusions, and so that's what is
31 the --
32
33 **DR. WOODWARD:** How about this alternative language? Supports the
34 cautionary -- The careful application of LAPPs in mixed-used
35 fisheries.
36
37 **CHAIRMAN NANCE:** Rich, you need to let Jessica know where you're
38 inserting this.
39
40 **DR. WOODWARD:** So, instead of "proceeding with caution", sort of
41 recommends or supports -- Instead of "proceeding with caution",
42 supports the use of LAPPs with appropriate caution". Are you okay
43 with that, John, and you would have to strike the words "the SSC
44 recommends to", and it would just be "the SSC supports".
45
46 **MR. MARESKA:** I guess I'm going back to the documents, and I am
47 not sure that the council is going to be actually using the LAPPs
48 as much as evaluating their use and gathering information on them

1   and so we can go back and --
2
3   **DR. WOODWARD:** Okay.
4
5   **CHAIRMAN NANCE:** Okay. Why don't you go ahead, Jess, and take
6   that correction out. Okay. Perfect. Right now, it's remaining
7   as it was. Roy, did you have a -- Pass? Ava.
8
9   **DR. LASSETER:** Thank you, Mr. Chairman. I am wondering if what is
10 needed would be between -- So, "additionally, the SSC recommends
11 proceeding with caution as the analysis of the influence of LAPPs
12 on fisheries is constrained by the scarcity of data", and is that
13 -- Does that maybe get better at what the motion maker was trying
14 to say?
15
16 **CHAIRMAN NANCE:** John, to that point?
17
18 **MR. MARESKA:** I'm fine with that change.
19
20 **CHAIRMAN NANCE:** Harry?
21
22 **MR. BLANCHET:** I'm fine with it.
23
24 **CHAIRMAN NANCE:** Okay. Thank you, sir. Mandy.
25
26 **DR. KARNAUSKAS:** Thank you, Chair. I had a sort of similar point
27 of clarification. Are we, in this discussion, aiming to recommend
28 the use of LAPPs versus not, or are we aiming to discuss whether
29 or not we want these recommendations on the analysis of LAPPs to
30 go forward, because, based on the information that's been put in
31 front of the SSC, I don't think I'm able to make a determination
32 to say that I support LAPPs, or I don't support LAPPs, but I am
33 certainly eager to make a recommendation as to these
34 recommendations coming out of the report, and so I'm looking for
35 some clarification on that.
36
37 **CHAIRMAN NANCE:** The way this is reading is we feel like the
38 recommendations are appropriate, and, if the council proceeds with
39 using any of these recommendations, that they proceed with caution,
40 and that's how I'm reading this motion. Does that make sense?
41
42 **DR. KARNAUSKAS:** It does, and if I could follow-up a little.
43
44 **CHAIRMAN NANCE:** Absolutely.
45
46 **DR. KARNAUSKAS:** Thank you. I do like the recommendations that
47 have been put together and I like the bolded text that we had up
48 on the screen prior to lunch, especially with the encouraging of

1 interdisciplinarity and integrating qualitative and quantitative
2 data to generate hypotheses and discern and test policy impacts.
3
4 I think that, given the scarcity of data that are pointed out in
5 this motion, I think that particularly combining those types of
6 data are really important, and so I don't have specific language,
7 but I wonder if the motion proposer would be open to including
8 some text on that in this. Thanks.
9
10 **CHAIRMAN NANCE:** John, to that point?
11
12 **MR. MARESKA:** Yes, and so it was written as it was because, under
13 our statement of work, the SSC may comment on the feasibility of
14 the recommendations, and so my intent was that, yes, they're all
15 feasible, and they're equal, and we don't prefer one or the other,
16 but we still recommend moving forward with caution, and that's to
17 the point of things that I mentioned earlier that should be in the
18 minutes about things that gave me pause.
19
20 **CHAIRMAN NANCE:** Okay.
21
22 **MR. MARESKA:** But, Mandy, I'm open to whatever your suggestions
23 may be, and so, if you want to wordsmith it, please.
24
25 **DR. KARNAUSKAS:** Thank you. Let me think about it a bit more, and
26 I'll come back to it. Thanks.
27
28 **CHAIRMAN NANCE:** Okay. Doug.
29
30 **MR. GREGORY:** Thank you, Mr. Chair, and thank you, John. I do
31 like the first sentence. The second sentence, my first reaction
32 was no, and then I don't really understand what it's saying,
33 because I disagree with the second sentence, because it's referring
34 to LAPPs in the commercial fishery, and I agree with the second
35 sentence if it's talking about recreational LAPPs, recreational
36 fishing LAPPs, because, if you just put the word "recreational" in
37 front of "LAPPs" in that second sentence, then I wouldn't have the
38 heartburn. I don't think it's wise in commercial fisheries.
39
40 **CHAIRMAN NANCE:** So, Doug, it would "LAPPs on recreational
41 fisheries"?
42
43 **MR. GREGORY:** No, because then you can misinterpret that as
44 implying commercial LAPPs on recreational fisheries.
45
46 **CHAIRMAN NANCE:** Okay. So you're suggesting --
47
48 **MR. GREGORY:** This just says that it has an impact, but knowing

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1 there is some people -- Then there's been talk about establishing
2 recreational LAPPs, and then that's a very tricky thing to delve
3 into, and this sentence fits perfectly with that, that the
4 influence of recreational LAPPs on fisheries is constrained by the
5 scarcity of data and its ability to decrease uncertainty in
6 fisheries management is not well defined. Without the word
7 "recreational", I would oppose that second sentence completely.
8
9 **MR. MARESKA:** Mr. Chairman?
10
11 **CHAIRMAN NANCE:** John, to that point?
12
13 **MR. MARESKA:** I agree with Doug's addition there, because that was
14 the presentation that we received at the last SSC meeting that the
15 implementation of recreational LAPPs and how would it potentially
16 impact the fisheries that weren't under the LAPPs, and so that is
17 a valid point.
18
19 **CHAIRMAN NANCE:** Go ahead and put that in, Jessica, before "LAPPs".
20 Harry, any issue with that?
21
22 **MR. BLANCHET:** No, and I would say make that recreational fishery
23 LAPPs, and then you don't need the "on fisheries", but maybe that
24 is changing something.
25
26 **CHAIRMAN NANCE:** How is that? John, any heartburn over that one?
27
28 **MR. MARESKA:** No, sir.
29
30 **CHAIRMAN NANCE:** Okay. Thank you. Ava.
31
32 **DR. LASSETER:** Thank you. I am wondering what you are recommending
33 caution about, to who and concerning what.
34
35 **MR. MARESKA:** As I stated before the lunchbreak, my concerns were
36 particularly related to the AMOs in the recreational sector.
37
38 **DR. LASSETER:** Okay. Then I think my suggestion of adding
39 "analysis" in there was a misunderstanding of the motion, because
40 I had understood you were going to comment on motions about
41 research and data collection needs, and I think now I understand
42 that you're talking about the motions, the more policy-oriented
43 recommendations, that were to the council, and so you may want to
44 remove that analysis part that I had suggested.
45
46 **MR. MARESKA:** Well, I would like to hear more comments from the
47 SSC, and so those were my concerns, but, if the SSC as a whole
48 agrees, or feels like that's more appropriate, then that needs to

1 be the motion.
2
3 **CHAIRMAN NANCE:** Yes. Roy, you have a comment?
4
5 **DR. CRABTREE:** Well, just one, and, I mean, the Gulf Council has
6 certainly been cautious about proceeding with any new LAPPs, and
7 we haven't developed a new LAPP, and the only consideration of one
8 in the charter boat fishery -- The decision was not to proceed
9 with it.
10
11 Is it clear to others what it means to say, "the recommendations
12 are equally plausible for consideration"? That seems rather
13 awkward, and I'm not sure what that means, and I guess that's what
14 I am struggling with, is what is that saying?
15
16 **MR. MARESKA:** It's saying that we're not prioritizing any of the
17 recommendations, one over the other, and that was also something
18 that was in the statement of work, if we were to prioritize any of
19 them, and so they have equal priority.
20
21 **DR. CRABTREE:** Maybe we could say that then, that the
22 recommendations we think are all of equal priority?
23
24 **MR. MARESKA:** Yes, and that's fine.
25
26 **CHAIRMAN NANCE:** Okay. I think that helps. Any other comments by
27 SSC members? Trevor.
28
29 **MR. MONCRIEF:** I mean, I guess, if everybody is okay with that
30 change on the end, that's appropriate, and I was kind of going
31 down the route of matching the language we used previously, and
32 say "equally appropriate for consideration", or something to that
33 end, because, in my mind -- Well, I guess it's clear enough now,
34 but the priorities on the recommendations and all that stuff -- I
35 think there is one, for sure, that we have concerns with, and it's
36 listed in this motion, and so I think it should be clear, but I
37 just wanted to bring that up.
38
39 **CHAIRMAN NANCE:** Thank you. Before we move forward, Mandy, any -
40 - Go ahead, Mandy.
41
42 **DR. KARNAUSKAS:** Thanks, and I'm sorry if I am throwing a wrench
43 in this, but I guess does the SSC feel that these are all equal
44 priority, because, first, I kind of like some of the
45 recommendations over others, and I would prioritize them if we had
46 to, with limited capacity to look into all these things, and so do
47 we all feel that all of these recommendations are equal priority?
48

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1   **CHAIRMAN NANCE:** Well, unless there is any comments from the SSC,
2   that's what I am interpreting. No one has brought any higher
3   priorities forward for any of these. Roy.

5   **DR. CRABTREE:** Mandy, if you have some suggestions for priorities,
6   I would certainly be receptive to that.

8   **CHAIRMAN NANCE:** Trevor.

10   **MR. MONCRIEF:** I was just going to bring up that we didn't really
11   rank on the high-priority side, but what we did, or at least what
12   I tried to convey, and I think what John is conveying with this
13   motion, is that there are some that have a lot less data associated
14   with them, with the ability to move forward, and those should be
15   treated with caution, and so I think we kind of addressed a little
16   bit of the priority here, by saying these recommendations are of
17   use. However, we should maintain caution with this specific side
18   of it, because of the data constraints, and so I think it works,
19   for me.

21   **CHAIRMAN NANCE:** Yes, and I feel the same way. Luke.

23   **DR. FAIRBANKS:** Actually, what Trevor just said may address what
24   I was thinking, but, in terms of priority, I mean, I think some of
25   the prioritization is kind of -- It would almost be just implicit
26   in our discussion, and also just the report itself, in that, where
27   we do have scarce data, or data-poor programs, or fisheries, you
28   kind of would have to prioritize methodological development and
29   data development. Otherwise, you're putting the cart before the
30   horse, and some of the recommendations I think speak more to
31   developing interdisciplinary research approaches, versus others
32   that are more directly relevant to management.

34   In a sense, I think things are -- Just, as they're written, they're
35   almost prioritized, because one kind of has to come before the
36   other, unless I am misunderstanding this here.

38   I don't know if we need to spell that out, especially given what
39   Trevor just said, and I think that makes sense, but that was kind
40   of what I was thinking, but I think there is some prioritization,
41   at least in my mind, but, whether we need to make that explicit or
42   not, I'm not sure.

44   **CHAIRMAN NANCE:** Okay. If we want to have like a substitute
45   motion, if you wish, if you want to change this one. I think this
46   is -- From my perspective, this is general enough that it gives -
47   - From the SSC's perspective, as far as trying to prioritize these
48   things, we're not choosing anything that has a higher priority

than another, but we have this recommendation of caution with
regards to the recreational fishery LAPPs, with the constraint of
there's not a lot of data, and that decreases the uncertainty in
fishery management, and so I think this kind of does that, but I'm
certainly open to suggestions.

DR. FAIRBANKS: I'm not sure, and I may have to think about it,
and I do agree that it's probably fine. I mean, I guess my concern
is that the second sentence kind of suggests that there should be
a prioritization. I mean, if we're constrained by a scarcity of
data, shouldn't that kind of -- Doesn't that kind of imply that
there is a priority to improve our data, or -- I may be reading
too much into it, because we've kind of been staring at this stuff
for a little bit here.

CHAIRMAN NANCE: Yes. Harry, to that point?

MR. BLANCHET: Yes, sir. To me, what it means is more, before you
would be going down any road that considers a recreational fishery
LAPP, there's an additional step that you need to do, and that is
to do some data collection analysis and evaluation, and so I don't
see that as recommending that as necessary, unless you are
considering a recreational fishery LAPP. Otherwise, it would be
irrelevant research for management, and so I see that as just an
additional step to take for any piece of that, and so that's all
I'm seeing that as and not as a recommendation that this is where
your money for research should go, but it's actually the opposite.
It's only if -- It would go there only if it's necessary.

DR. FAIRBANKS: That makes sense to me. Thank you.

CHAIRMAN NANCE: Thank you, Luke. Thank you, Harry. Mandy.

DR. KARNAUSKAS: Thank you. Trying to add to the previous points
and answer Roy's question about what I would prioritize, again, I
do like the last recommendation, the one that we bolded in the
report, which I read off a little bit of it earlier, but, in regard
to this motion, I'm just having a little bit of trouble wrapping
my head around what it means, and it strikes me as just a little
bit too broad to really get across the SSC's feelings about this
report.

Also, as was brought up earlier, I'm a little bit unclear on what
we're cautioning in the second statement, and I wonder if it would
be useful to go through the recommendations one-by-one and just do
we like them, do we not like them, and, if we don't like them,
where do we have problems with them, and so I don't think I would
support this motion, in its current form.

176

1
2 **CHAIRMAN NANCE:** Okay. Thank you. Ava.
3
4 **DR. LASSETER:** Great. Thank you. Mandy, I concur, and I am still
5 struggling with that caution part, and I like the idea of maybe us
6 returning to the motions, because we do not currently have a
7 recreational fishery LAPP, and so I don't understand who you are
8 directing this caution to be proceeded -- I don't understand the
9 influence part either, because we don't have this yet.
10
11 The report does talk about, if you're going to do anything, you
12 definitely need a whole lot of data, and then it also talks about,
13 for existing LAPPs, you can't do proper analyses, as mandated,
14 because of all the data we're missing, and so I think there could
15 be -- I think the proceeding with caution means you really need
16 information to be making decisions going forward, and then coming
17 back to the recreational fishery LAPPs, and so maybe we could go
18 to the recommendations.
19
20 **CHAIRMAN NANCE:** Well, we need to take care of the motion first,
21 and we can't just -- Let's go ahead and take care of this motion.
22 Mandy.
23
24 **DR. KARNAUSKAS:** I'm sorry. I forgot to put my hand down.
25
26 **CHAIRMAN NANCE:** Okay. Luiz.
27
28 **DR. BARBIERI:** Thank you, Mr. Chairman. I am trying to understand
29 here what direction, or what message, we want to send with this
30 motion and whether we need to. I mean, is this something that we
31 need to do? I mean, there was a study, and there was a report
32 that was produced, and it makes a number of recommendations, and
33 most of the recommendations are more general, policy-oriented, and
34 they are more general, and they don't really -- The nature of
35 studies like this is that they don't actually get the opportunity
36 to get into the weeds and evaluate specific situation or cases.
37
38 I think that the study stands on its own, and it can provide some
39 useful, but general, guidance, and mostly it's really policy-
40 oriented, and I am just having trouble reading this motion and
41 understanding where we are trying to go with this. John, since
42 you are the one who made the motion, I am just being blunt and
43 perfectly honest here, to say that I am not understanding whether
44 we need to provide this level of specific guidance to the council
45 on this point on this topic.
46
47 **CHAIRMAN NANCE:** John, anything to that point?
48

1 **MR. MARESKA:** Yes, and so this was an option, and the SSC definitely
2 doesn't need to make a recommendation, but I thought that I would
3 put one forward that kind of is trying to, I guess, initiate
4 something that the council may actually read the minutes a little
5 bit more in detail, to figure out what the concerns were,
6 particularly mine.
7
8 If enough of the SSC members feel like we don't need to prioritize
9 anything, and we haven't heard any recommendations, in reality,
10 about prioritizing any of these, and I really appreciate the
11 additional discussion that it has generated, but we'll move
12 forward, and I will see what Stephen and Trevor have to say, but
13 I may withdraw the motion.
14
15 **CHAIRMAN NANCE:** Thank you, John. Steven.
16
17 **DR. SCYPHERS:** Thank you, Mr. Chair. Just a couple of thoughts on
18 this, and I tend to agree with Mandy on the point of -- I don't
19 know if necessarily I would encourage saying equal priority, if we
20 haven't really spent the time talking through each one of them and
21 seeing if we do, and so, if you're not intending to withdraw the
22 motion, I might suggest just a friendly amendment to remove that
23 "equal priority consideration" part, but, a little bit more
24 broadly, the second sentence is what is giving me the most pause,
25 because it could be interpreted that the SSC is making a
26 recommendation to proceed, when I don't think that's what we're
27 saying or what we have centered the discussion on.
28
29 If we were to proceed with this, I would suggest a friendly
30 amendment to the second part that got something towards the nature
31 of the SSC concurs with the report's recommendations, but scrutiny
32 and caution is needed before considering proceeding towards
33 recreational LAPPs, so that it's not interpreted as the SSC says
34 to proceed towards recreational LAPPs, that essentially we're
35 agreeing with the report and saying that more scrutiny is needed,
36 but just a couple of thoughts there. Thank you.
37
38 **CHAIRMAN NANCE:** Steven, save those words. John.
39
40 **MR. MARESKA:** I don't have additional comments at this time.
41
42 **CHAIRMAN NANCE:** Okay. Trevor.
43
44 **MR. MONCRIEF:** I think what Steven just said -- I think that's an
45 appropriate change to the motion, and I think it kind of gets to
46 where we're going. I will say that we were presented information
47 on this topic, and it was experimental, but it was at least an
48 approach to look at redistributing fish in the recreational sector,

1 and so it's not like these things aren't being considered at the
2 moment, and they are definitely being evaluated, and I think, for
3 the folks that are going through the transition process, and those
4 familiar with the catch estimates and how much disparity there is,
5 I think that's the basis of this motion here, is that we have a
6 lot of detailed information for some of our sectors, but, on the
7 recreational side, there is a lot of disparity between survey
8 estimates and what survey you're using and, within those surveys,
9 the non-sampling errors and everything else that are being
10 evaluated currently by all the groups.
11
12 I think Steven's change here appropriately addresses the concern
13 and lays it out in a fashion that doesn't make it seem like the
14 SSC is pushing or denying or -- Essentially, we're concurring with
15 the report, and I agree with the statement, and that we do need to
16 proceed with caution with a group of these recommendations, and I
17 think the minutes associated with the motion will suffice for the
18 explanation as to why we put this motion forward.
19
20 **CHAIRMAN NANCE:** Luiz.
21
22 **DR. BARBIERI:** Thank you, Mr. Chairman. Trevor, I get your point,
23 and I don't necessarily disagree with it, but my point here with
24 this is, the specificity that we're discussing some of these things
25 is that, at this point, as far as I understand it, the council is
26 not, and hasn't been, considering any recreational LAPPs, right,
27 and this is not something that seems to be on the table right now.
28
29 I am not saying anything for or against it, but I am just saying
30 that's not even a discussion at this point, and so I just feel --
31 Again, I am thinking here about Jim being at the council meetings,
32 and questions come up from council members at times, and they are
33 trying to basically understand what are we trying to tell them
34 here, through these motions, that sometimes our report is not
35 really able to convey, because reports are, obviously, limited in
36 communicating the completeness of ideas, and so I just want to
37 make sure that we have clarity of what we're trying to achieve
38 here with this and that we're not sending them what they may
39 perceive as mixed messages about things that they are not even
40 considering at this point.
41
42 **CHAIRMAN NANCE:** Thank you, Luiz. Rich.
43
44 **MR. MONCRIEF:** Can I follow that, real quick?
45
46 **CHAIRMAN NANCE:** Trevor, yes, sir.
47
48 **MR. MONCRIEF:** Luiz, to that point, I definitely understand where

1 we're trying to provide clarity to the council and everything,
2 but, you know, what I am thinking here is that we're providing a
3 motion that, yes, while, in the short-term, there might be some
4 confusion about it, but there is definitely pathways that are
5 taken, as far as resources being allocated to various studies and
6 the approaches taken on different sectors, that can often occur
7 without any input from the council or from the SSC, and we don't
8 see it until its beyond -- Until it's almost ready, like 75 percent
9 there, or ready to be implemented, or whatever else you want to
10 call it.
11
12 I think, in my mind, it's a report that came out, and we're
13 providing the information, if it's a consensus or not, or if the
14 motion passes or fails, but I think what we're doing is saying
15 we've looked at this information, and this is how we view it at
16 the moment, and so I can understand your points you're making, and
17 I know where you're coming from, but I just think we need to put
18 at least something out there, and so that's it.
19
20 **CHAIRMAN NANCE:** Thank you, Trevor. Rich.
21
22 **DR. WOODWARD:** I am struggling with the second sentence entirely,
23 and I am wondering what is added, in terms of whether it's really
24 necessary, and, I mean, I guess my concern is that, when we decide
25 to say don't move, because you don't have information, well, to
26 some extent, you can't get information until you move, and so I am
27 getting the sense that this is going to be interpreted as saying
28 don't do anything, because you don't know what you're doing, but
29 a decision to not act is a decision, and so -- I don't see, in the
30 recommendations from the National Academy report, exactly what is
31 stated here, in terms of the phrase "proceeding with caution", and
32 that is the phrase that has me troubled, and so I would be more
33 comfortable if we simply struck the second sentence entirely, or
34 the SSC notes that recreational fishery LAPPs are constrained by
35 a scarcity of data.
36
37 **CHAIRMAN NANCE:** Rich, are you making a substitute motion?
38
39 **DR. WOODWARD:** No, and that's pretty -- I am not. I am just saying
40 this is my concerns, and, as currently written, I would not support
41 it.
42
43 **CHAIRMAN NANCE:** Okay, but you certainly have the opportunity to
44 make a substitute motion if you wish.
45
46 **DR. WOODWARD:** I feel like it would be perhaps going pretty far
47 from what the original motion is.
48

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1 **CHAIRMAN NANCE:** I think that's what a substitute motion does.
2
3 **DR. WOODWARD:** All right. **Then the substitute motion is the same**
4 **motion, except for dropping the second sentence.**
5
6 **DR. CRABTREE:** Second.
7
8 **CHAIRMAN NANCE:** Okay, and so we have a substitute motion, and Dr.
9 Crabtree seconded that motion.   Is there discussion on the
10 substitute motion? Harry.
11
12 **MR. BLANCHET:** Mine was to the original motion.
13
14 **CHAIRMAN NANCE:** Okay. Any discussion on this motion? Steven.
15
16 **DR. SCYPHERS:** Thank you, Mr. Chair. I am not wanting to hold us
17 up, but I still think -- I'm not sure we've had a discussion to
18 conclude equal priority, and it seems like talking through them,
19 as Mandy suggested, might be the process to do that, and so I don't
20 know how important that last part is for the motion, but I
21 personally don't feel like I have gotten to that point of feeling
22 like they are equal consideration.
23
24 **CHAIRMAN NANCE:** Okay. Any other comments on this substitute?
25 Rich.
26
27 **DR. WOODWARD:** Just I would be happy to, in my substitute motion,
28 to strike -- Can we just strike "are equal priority for
29 consideration" and then "that agrees with --" Instead of saying
30 -- At the beginning, instead of saying "The SSC finds that the
31 recommendations", say "The SSC agrees with the recommendations
32 from the --"
33
34 **CHAIRMAN NANCE:** **So the substitute motion reads: The SSC agrees**
35 **with the recommendations from the National Academies of Science**
36 **report on the use of limited access privilege programs in mixed-**
37 **use fisheries.** Thank you, Rich. John.
38
39 **MR. MARESKA:** I guess, to Mandy's point, and, also, when you look
40 at the document, you have primary recommendations, and then you
41 have additional recommendations, and so I guess you're agreeing
42 with -- I guess I'm going to need some clarification on the
43 document, because the -- Under each recommendation, there is an
44 asterisk that begins each one of those recommendations, and I guess
45 does that infer a priority, and so the impact to the recreational
46 stakeholders that -- That is the primary recommendation, and then
47 there's additional recommendations down below, and so are we
48 agreeing then with the priorities that we're seeing in that

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1 document?

2
3 **CHAIRMAN NANCE:** Yes, and I think Ava has something to that point.

4
5 **DR. LASSETER:** Thank you, and so that document is taken straight
6 from the actual report. These recommendations are found in two
7 sections in the document, and that's explained in the first
8 paragraph on the actual document, and there is five recommendations
9 with an asterisk at first, and those are provided in the summary
10 chapter, and those are the primary, the main, recommendations.

11
12 Those are each repeated in Chapter 8, along with these additional
13 recommendations, and so the five with an asterisk are repeated
14 twice in the report, and then all the other ones are provided just
15 once in Chapter 8.

16
17 **MR. MARESKA:** Ava, does that infer a prioritization of those
18 recommendations?

19
20 **DR. LASSETER:** No.

21
22 **MR. MARESKA:** All right. Thank you for that.

23
24 **CHAIRMAN NANCE:** Okay. Let's go ahead and move forward on this
25 substitute motion. **The SSC agrees with the recommendations of the**
26 **National Academies of Science report on the use of limited access**
27 **privilege programs in mixed-use fisheries. Any opposition from**
28 **the SSC on this motion?** Jason, is that opposition or a question?
29 John. Okay. Let's go ahead and do a roll call vote on this then.
30 Thank you. Jessica, please.

31
32 **MS. MATOS:** Josh Kilborn.

33
34 **DR. KILBORN:** Yes.

35
36 **MS. MATOS:** Cindy Grace-McCaskey.

37
38 **DR. GRACE-MCCASKEY:** Yes.

39
40 **MS. MATOS:** Michael Allen.

41
42 **DR. ALLEN:** Yes.

43
44 **MS. MATOS:** Luiz Barbieri.

45
46 **DR. BARBIERI:** Yes.

47
48 **MS. MATOS:** Roy Crabtree.

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 1
 2   DR. CRABTREE:  Yes.
 3
 4   MS. MATOS:  David Griffith.
 5
 6   DR. GRIFFITH:  Yes.
 7
 8   MS. MATOS:  Jim Nance.
 9
10   CHAIRMAN NANCE:  Yes.
11
12   MS. MATOS:  Steven Scyphers.
13
14   DR. SCYPHERS:  Yes.
15
16   MS. MATOS:  Rich Woodward.
17
18   DR. WOODWARD:  Yes.
19
20   MS. MATOS:  Will Patterson.
21
22   DR. PATTERSON:  Yes.
23
24   MS. MATOS:  Paul Mickle.
25
26   DR. MICKLE:  No.
27
28   MS. MATOS:  Benny Gallaway.
29
30   DR. GALLAWAY:  Yes.
31
32   MS. MATOS:  Harry Blanchet.
33
34   MR. BLANCHET:  No.
35
36   MS. MATOS:  Jason Adriance.
37
38   MR. ADRIANCE:  No.
39
40   MS. MATOS:  Luke Fairbanks.
41
42   DR. FAIRBANKS:  Yes.
43
44   MS. MATOS:  Mandy Karnauskas.
45
46   DR. KARNAUSKAS:  Yes.
47
48   MS. MATOS:  Steven Saul.
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1
2   **DR. SAUL:** Yes.
3
4   **MS. MATOS:** Jack Isaacs.
5
6   **DR. ISAACS:** Yes.
7
8   **MS. MATOS:** John Mareska.
9
10 **MR. MARESKA:** No.
11
12 **MS. MATOS:** Lee Anderson.
13
14 **DR. ANDERSON:** Abstain, because I was on the panel.
15
16 **MS. MATOS:** Dave Chagaris.
17
18 **DR. CHAGARIS:** Yes.
19
20 **MS. MATOS:** Doug Gregory.
21
22 **MR. GREGORY:** Before I vote, I just want to point out that I guess
23 Word is not letting you put the table on the same page as the
24 motion we're voting on.
25
26 **MS. MATOS:** Yes, and I'll fix it when we're done.
27
28 **MR. GREGORY:** As long as we all know what we're voting on. I vote
29 yes.
30
31 **MS. MATOS:** Trevor Moncrief.
32
33 **MR. MONCRIEF:** No.
34
35 **MS. MATOS:** Sean Powers.
36
37 **DR. POWERS:** Abstain.
38
39 **MS. MATOS:** Jim Tolan.
40
41 **DR. TOLAN:** No.
42
43 **CHAIRMAN NANCE:** Thank you for that. Because of time, we're going
44 to move on to our next topic, and I appreciate the discussion on
45 this subject, and I feel that we had a good discussion, and I
46 appreciate that. Now we'll go on to Item Number XIII, and, Ryan,
47 would you take us through the scope of work for that, please?
48

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**EVALUATION: UPDATED SEFSC CATCH ANALYSIS FOR GULF OF MEXICO RED
SNAPPER USING THE GREAT RED SNAPPER COUNT**

MR. RINDONE: Sure, Mr. Chair. Mr. Matt Smith and Dr. LaTreese Denson are going to present the results of the Science Center's updated catch analysis for red snapper, based on, or derived from, rather now, the Great Red Snapper Count estimate of absolute abundance and the SSC's recommendations for parameterization. At this point, this will also include the LGL estimate for the State of Louisiana.

The catch analyses will be based on you guys' discussions, and you guys should consider the differences between -- Well, when there were going to be multiple analyses, you were going to consider the differences between them and select which one you thought was most plausible, if appropriate to do so, and you may also, at your discretion, consider other modifications that you think are appropriate.

Based on the decisions that you guys have made over the last twenty-four hours, a lot of this is a little outdated now, and so, at the end of it all though, if you find that it's appropriate to recommend revised catch advice for red snapper to the council, you may do so, including updating the overfishing limit and acceptable biological catch values on that information.

We had also received an update to the Gardner analysis kind of late in the game, and so that's not mentioned here either, but that information was posted to the meeting page for you guys' review, and so, Mr. Chair.

CHAIRMAN NANCE: Thank you, and each of the SSC members should have received an updated presentation, and so each of you have that, and so, Matt and LaTreese -- I am not sure who is going to present first.

MR. MATT SMITH: It will be me, Mr. Chair. Away we go. All right. Good afternoon, everybody. This is Matthew Smith from the Southeast Fisheries Science Center, and myself and LaTreese Denson are leading the upcoming SEDAR 74 red snapper research track assessment, along with all of the rest of the members of the Sustainable Fisheries Division, and it's a very team pull.

I am going to be presenting to you this updated catch analysis, and this is a follow-on from what we looked at last March, and I don't know if all the present members were here last March or not, but, at the last March 2021 meeting, we looked at some catch analyses derived from the Great Red Snapper Count, and this is a

1 follow-on to that, given all the changes that have happened since
2 then.
3
4 Without further ado, as we all are aware, from the last year, and,
5 like Ryan said, even quite a bit yesterday, the Great Red Snapper
6 Count estimate of absolute abundance was finalized, but then it
7 has undergone a number of re-analyses, including things requested
8 form the states, things requested from the Science Center, and
9 then, as of yesterday, we had additional data come into play that
10 has now been all kind of put together, and we have come up with a
11 new estimate of absolute abundance, different from the Great Red
12 Snapper Count, but what we're going to be considering as a
13 potential basis for catch advice and as an input into the stock
14 assessment model that we're getting underway with now.
15
16 In light of all of these changes, the council has requested that
17 we reevaluate the catch advice that we produced last March and
18 give the SSC different options to consider for setting catch advice
19 for the interim period between now and the completion of SEDAR 74.
20
21 Just to remind everybody, in case it slipped your mind, during the
22 March 2021 meeting, the catch advice derived from the Great Red
23 Snapper Count was used to set the OFL, but then we went on to set
24 the ABC based on a traditional interim analysis that uses
25 projections derived from SEDAR 52.
26
27 In the working paper that we put out for this, there's an appendix
28 on it which includes the working paper from March of 2021, which
29 has a lot of the nitty-gritty of how the projections were set up,
30 and I'm going to go through a lot of it here, but, if you need
31 additional details, they are in the current working paper as the
32 appendix, for reference.
33
34 In general, from a thirty-thousand-foot view, what we want to do,
35 in these projections, is take the Great Red Snapper Count estimate,
36 or our new estimate of absolute abundance of age-two-plus fish and
37 then turn that into numbers-at-age, and then, using those numbers-
38 at-age, we run our projections to get updated fishing mortality
39 rates that take into account some of the unique properties of the
40 Great Red Snapper Count that differ from what we had for SEDAR 52,
41 some of those being how the biomass is distributed around the Gulf,
42 which we've talked about extensively.
43
44 Then, also, how recruitment is going to be treated in this, which
45 we'll get into in this presentation as well, but they have an
46 impact on those fishing mortality rates, and it was beneficial for
47 us to do these projections to re-estimate the fishing mortality
48 rates that produce the catch advice.

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1
2   Once we have numbers-at-age and fishing-mortality-at-age, we can
3   take those and an estimate of mean landed weight-at-age and produce
4   catch in pounds from this age-two-plus numbers-at-age.
5
6   Now we're going to walk through all the different steps to get
7   there in a little bit more detail, and one of the things we got
8   from the March 2021 meeting, as well as a number of SSC meetings
9   in between, is concern around the uncertainty of these estimates,
10  and that uncertainty is coming from all different directions, and
11  we didn't really have a great way of getting at the uncertainty,
12  and so, to try to provide some options for the SSC for this meeting
13  to look at, we're undertaking two different approaches.
14
15  One of those will be to do sort of deterministic projection, where
16  we're using point estimates from each of the big decision points
17  that we're going to talk about in a second, projecting those, and
18  getting what we could consider like an OFL, and then doing
19  something that we've seen in a lot of stock assessments, which is
20  kind of using a 75 percent as sort of a proxy, and we are unsure
21  about uncertainty and doing a projection at 75 percent of that
22  FSPR rate, to get something that could be potentially considered
23  as an ABC.
24
25  The other approach is to try and incorporate the uncertainty that
26  we do have measurements on directly, through a Monte Carlo
27  simulation, and the things that we are going to vary in that
28  simulation are the number of two-plus fish, the assumption of
29  recruitment in the projections, the fishing mortality rates by the
30  fleets, and the initial depletion assumed for the stock, and we're
31  going to go through each one of these in turn.
32
33  The first step along the way is to choose an estimate of age-two-
34  plus fish, and we basically accomplished this goal yesterday, and
35  some of this presentation was pre-written, and so parts of it will
36  be out-of-date, but I tried to do my best to update it between
37  yesterday and today.
38
39  There were two things, and the first step is the reanalysis of the
40  Great Red Snapper Count, where we went back in and reincorporated
41  the random forest design into the Great Red Snapper Count estimate,
42  and that number kind of is our baseline where we start from, and,
43  in a lot of the slides coming, those values will be displayed, and
44  they are for reference only, and the results of those, in terms of
45  catch advice, are no longer in here, but the roughly 96.7 million,
46  which was sort of the basis point we started from at the end of
47  the last SSC meeting, or at least the last one that I attended,
48  but they happen so frequently that I might have missed one, is
```

this value here, this Great Red Snapper Count estimate, is what
I'm calling it in the presentation, even though that's no longer
really appropriate, as we discussed yesterday.

The one that we're going to talk about today is what we decided on
yesterday, and that is starting from this random forest Great Red
Snapper Count number, and we underwent the Florida post-
stratification, which we talked about in-depth yesterday, and then
we replaced the original Louisiana abundance estimates with those
produced by LGL.

Again, lots of numbers, but this is just to give you an idea of
where the changes come from, and so, on the far-right here, we
have the Great Red Snapper Count numbers, and this is the random
forest model built back in, numbers by state and habitat type, and
we wind up with that 96.7 million, roughly, that we had a few
months ago.

You can see, by doing the post-stratification and LGL results,
it's a reduction of about eleven-million fish from the overall
estimate of age-two-plus fish. The lion's share of those come
from the Louisiana data replacement. As you can see, the big
differences here, as we discussed again yesterday --

CHAIRMAN NANCE: Matt, would it be appropriate to have questions
throughout, or do you want to wait until the end? How would you
--

MR. SMITH: Whatever works for you, Chair. That's fine with me,
and I can take questions now, if that's what you would like.

CHAIRMAN NANCE: Okay. Roy.

DR. CRABTREE: Hi, Matt. This estimate from the Great Red Snapper
Count is for 2019?

MR. SMITH: Essentially, yes. Data was collected in 2018 and 2019,
and we would probably consider it as a 2019.

DR. CRABTREE: So then you're projecting forward from 2019 and
applying the various Fs?

MR. SMITH: That is correct.

DR. CRABTREE: Okay. Thanks. Benny's study was done about a year
later, but pretty close in timeframe, Scott?

CHAIRMAN NANCE: Okay. Thank you, Matt.

1
2   **MR. SMITH:** I can continue?
3
4   **CHAIRMAN NANCE:** Absolutely. Thank you.
5
6   **MR. SMITH:** All right. Great. As I was saying, the lion's share
7   of the difference comes from Louisiana, and the only other
8   difference that's in here now is the change in the Florida natural
9   and uncharacterized bottom estimate, which declines by about one-
10 and-a-half million fish, as we decided that the Texas number was
11 no longer post-stratified, and nor was the Alabama-Mississippi
12 estimate. Going forward, the number of age-two-plus fish that
13 we're going to be working with is this 85,609,000.
14
15 Once we have settled on an abundance of age-two-plus fish, there's
16 a couple of steps that we have to take before we can run the
17 requested analyses. The first one is the Florida combined estimate
18 of natural and UCB abundance has to be split down into its
19 components, and that's because one of the things that was requested
20 was just looking at all structure, and we consider all structure
21 to just be the natural and artificial reefs and the pipelines, and
22 then the other ones requested incorporate percentage of the UCB,
23 and so, in order to accomplish those goals, we had to split that
24 number.
25
26 We did so using an estimate from the random forest model that was
27 used, or developed, as part of the Great Red Snapper Count and
28 used in the site selection for Florida, and, from that model, we
29 were provided with an estimate of 37.13 percent of that Florida
30 UCB natural abundance that was derived from natural reef, and the
31 rest from UCB. Just for reference, that equates to about 16
32 percent of the bottom, and so the random forest model identified
33 about 16 percent of the Florida bottom as being this natural reef
34 structure.
35
36 Then the next thing we've got to do is split the pipeline abundance
37 into the separate ecoregions, and, originally, last March, that
38 pipeline abundance was broken down by Texas, Louisiana,
39 Mississippi, Alabama, and Florida, and, this most recent run-
40 around, as we saw in the previous slide, there was just one overall
41 pipeline estimate, and it was only about half-a-million fish, and
42 it wasn't a ton, but we wanted to split it up anyway, and so we
43 did that using the proportions from the March analysis, which are
44 shown here, and so, of that about 500,000 fish, 18 percent went to
45 Texas, 65 to Louisiana, and so on and so forth.
46
47 After doing these two things, we have all of our fish split into
48 the categories that we can populate the scenarios that were

1 requested by the council, and those are shown here, and that is to
2 look at only the fish over structure, where, again, all structure
3 is the reefs, natural and artificial, and the pipelines, and then
4 all structure plus 10 percent of the UCB biomass and plus 15
5 percent of the UCB biomass.
6
7 The numbers of two-plus fish, and this is kind of our starting
8 point for these scenarios, that go into the subsequent analyses
9 are going to come from this second row, the Florida post-strat and
10 LGL, and, again, the top row is up there just to kind of give you
11 a reference for where and how things have changed, to get us from
12 where we were to where we are now.
13
14 As I'm going through this, I'm going to kind of go back and forth
15 in each one of these decision points. The previous slide, these
16 numbers down here, this, for example, all structure east of
17 22,866,000 and the eight million in the west, those represent the
18 deterministic point estimates that will be used in the one type of
19 analyses, and now we know, from all the discussions we've had,
20 that we have CVs and standard errors that come along with all of
21 these estimates.
22
23 We can take that information and put it into a simulation
24 environment, where, rather than have a single point estimate, we
25 can take random draws, using all the estimates of uncertainty, and
26 the point estimates that came from the studies, to generate a
27 distribution of possible numbers of age-two-plus fish for the east
28 and west.
29
30 Displayed here is just one of the outputs, and this is all
31 structure plus 10, and that's the AS10 thing up at the top, and
32 the other ones look very similar, with the only difference being
33 that the mean, shown by the vertical red line, sort of shifts left
34 and right on the X-axis, depending on how many fish you're starting
35 from, and so I just figured that I would just show one as an
36 example, but this is an example of the type of distribution we get
37 when we take into account the error that came along with those
38 estimates of age-two-plus fish.
39
40 Now that we have our estimate of age-two-plus fish, whether it be
41 the scenario-specific deterministic estimate or a Monte-Carlo-
42 derived random estimate, we have to take that number and split it
43 down into numbers-at-age. Back in March, and, again, back in March
44 of 2021, and again for the deterministic analyses now, we did that
45 using composition information from SEDAR 52, and so SEDAR 52 is
46 getting kind of long in the tooth now, and the last informed data
47 year for age composition in that model was 2016, and so that's the
48 year that we chose to derive the composition from.

1
2 Again, this is what's done for the deterministic projections here,
3 and, if you're looking at this figure at the bottom, and this is
4 the age frequency for the east in blue and the west in orange, and
5 it could become apparent, probably pretty quickly, that this is
6 not necessarily an average year, and so, here, we see the east --
7 There is quite a large number of two-year-olds, and the west is -
8 - Maybe a little bit below average two-year-olds in the west, and
9 this is important, because, in the projections, having what we
10 have from the snapper count, we don't have a way to really estimate
11 recruitment directly, and so we assumed that recruitment, going
12 forward in the projections, was equal to the number of two-year-
13 olds that were estimated from the first year of the age
14 composition, and so, in this particular case, we basically fix, in
15 the projections, an assumption of high recruitment in the east and
16 maybe a little bit below-average recruitment in the west.
17
18 That's a fairly strong assumption, and not necessarily the most
19 desirable one, and so, to get around that, we took advantage of
20 the Monte Carlo simulation and did two different things. The first
21 one is, rather than just start from 2016 and use those values as
22 the recruitment, basically the recruitment assumption, we took a
23 random draw from a distribution, and we created that distribution
24 by taking the last ten years, the 2007 through 2016, from SEDAR
25 52, the estimates of the age-two frequency, and we got a mean from
26 that, and those means are shown in the little text box off to the
27 right of the figures.
28
29 In the east, we estimated a mean two-year-old frequency of 41
30 percent, and, in the west, it's 38 percent, and so you can see
31 that, on average, they're much closer to each other, in terms of
32 the size of the recruitment class coming through, and that that
33 2016 value we looked at represents any given year, but potentially
34 not one that you want to fix in the projections going forward.
35
36 Once we estimated these means and the standard deviations from
37 that data, we used those distributions in the simulation to
38 generate a random starting point for the east and for the west for
39 our age-two frequency, and then, again, once we set that age-two
40 frequency, that was basically assumed as the recruitment in the
41 projections.
42
43 Once we got the age-two frequency, we just rescaled the other ages
44 up and down, so that the total age frequencies summed to one, such
45 that, when we multiplied the number of two-plus fish by the age
46 frequency distribution, we ended up with the same number of age
47 two-plus fish.
48

191

1 This is a bit confusing. If there's questions, we can go over it
2 now, or you can stew on it a little and we can come back to it,
3 but this was an important step, because it allowed us to get away
4 from that fairly strong recruitment assumption in the projections.
5
6 **CHAIRMAN NANCE:** Any questions at this point from SSC members?
7 Sean.
8
9 **DR. POWERS:** Matt, can you go back a couple of slides? That one
10 right there I guess is the point, and so that's informed by the
11 last fully-informed year of the stock assessment, and did you look
12 at the -- The Great Red Snapper Count had size frequency
13 distributions though, right, and that would have given you habitat-
14 specific size frequency, and I guess the uncharacterized bottom -
15 - I don't know how many targets we got there, but definitely, on
16 the natural and artificial, you would have had your own -- So the
17 question is why didn't you use the size frequency distributions
18 from there, from the video work, and then just -- Then start from
19 that point?
20
21 **MR. SMITH:** I mean, that's a reasonable question, Sean, but we got
22 the information from the snapper count, and, from looking through
23 it, we had some new information there from Florida, and then the
24 length comp that we saw from sort of the central-western region
25 appeared to be the same data that we had already in the stock
26 assessment. To take this to the step of building in habitat-
27 specific age composition, I am not even sure if I could make it
28 work, to be honest with you.
29
30 **DR. POWERS:** That part, I agree, is probably one that we have to
31 wait for the research track, to actually delve more into habitat-
32 specific ones, but I guess that answers my question, and you don't
33 think the pattern you have here would be that different if you
34 just used the length frequency from the Great Red Snapper Count.
35
36 **MR. SMITH:** Probably not, and there would certainly be differences,
37 and part of why we settled on just 2016, rather than using kind of
38 an average or years further past, is that we're in a rebuilding
39 stock, and so we do see, as you go back in time and look at the
40 age frequency distribution in the model -- There is less and less
41 of these middle-age and older fish, but the composition of kind of
42 the prime age fish doesn't change all that much in the last couple
43 of years, and, by prime age, I mean sort of like two through eight,
44 and it doesn't change all that much, but you do see the tails
45 getting fatter and fatter as we go forward in time, and so we
46 didn't want to go too far back in time and lose the information
47 about these older fish that is probably still relevant today.
48

1 Then most of the data that we saw, that came in the dataset provided
2 by the snapper count, was stuff that was already built into the
3 model, and it didn't seem to be all that much different.
4
5 **DR. POWERS:** Okay.
6
7 **CHAIRMAN NANCE:** Harry.
8
9 **MR. BLANCHET:** Thank you, and the slide you were just on, and that
10 last bullet, and so, basically, if you look in the west, the age-
11 three is kind of below -- We have gone over the question about the
12 age-two being below expectation, but, in that 2016 data, the age-
13 threes were also below the expectation that you would see if you
14 were going from what you would look at for age-four and older fish.
15
16 What you're saying is -- I am trying to understand it myself, and,
17 if that age-three -- Let's say lack of age-threes in the
18 composition, is that carried through in this as well, because it
19 would seem like it's kind of -- You've got the age-twos, but it
20 seemed like you go from the age-twos to the age-fours without going
21 through that bottom in the age-threes, and is that --
22
23 **MR. SMITH:** You're absolutely correct, and you've got to think
24 about in two different ways, I guess, and one is kind of an
25 equilibrium sense, and the other one is in the immediate couple of
26 years sense, and so, as we do the projections, those age-threes
27 will advance to age-fours one year, and then they will advance to
28 age-fives the next year, and so that dip there that you saw right
29 there, the orange one, for age-threes, will be carried through,
30 for the first couple of years, in the projections.
31
32 After a certain point, we're going to have this constant
33 recruitment coming in at whatever that age-two value is, and so
34 the age-threes will no longer have that dip, and they will be
35 determined by the fishing mortality rates on the age-twos and
36 whatever the abundance of the age-twos are, and so, in equilibrium,
37 when we're doing kind of a long-term OFL-type projection,
38 eventually those age-threes will get washed out, and there may be
39 some impact on the landings estimate for those first couple of
40 years, which is what we're going to look at, and it's not
41 completely irrelevant, what you're talking about, because we are
42 going to look at landings, and those landings are dependent on
43 extant composition and the selectivity of the fleets that are
44 fishing them.
45
46 It will have some effect, but, in terms of coming up with the new
47 Fs, through those equilibrium projections, it's not going to be
48 overly influential, and I don't know exactly how to determine it,

1 because I didn't look at it, what magnitude of an effect it would
2 have on the landings, but I don't think it's going to be all that
3 big.
4
5 **MR. BLANCHET:** Okay, and my concern was just that you weren't
6 forcing things down, to go from, in this picture -- So that the
7 estimates that you had derived actually take that orange point at
8 age-two and move it up to the 0.38, give or take, if I've got that
9 correct.
10
11 **MR. SMITH:** Yes, that's basically correct.
12
13 **MR. BLANCHET:** It's not going to force the age-threes then to
14 always be that much below it, and so it's basically going to move
15 and walk that year class forward, which is appropriate. Thank
16 you.
17
18 **MR. SMITH:** That is correct, yes. As the projections go, those
19 three-year-olds become four-year-olds, and they will eventually
20 work their way, by either being fished or just dying off, out of
21 the system, and the forecasted numbers are going to be determined
22 by the magnitude of the recruits, and so that's the two-year-olds,
23 and the fishing mortality, natural mortality, and selectivities
24 that are hitting them, and so, yes, it won't persist long-term in
25 the projections.
26
27 **MR. BLANCHET:** That bullet on the next slide, or the slide after
28 that, that last bullet just had me confused. Thank you.
29
30 **MR. SMITH:** It's confusing, and I apologize for that, and we talked
31 about internally, and I wasn't sure exactly how to get around it,
32 but what this bullet is basically saying is let's say we're over
33 here in the east, and our random draw says the age-twos are going
34 to be up here on this right tail, at 70 percent. 70 percent of
35 our age composition is going to be age-twos in the east.
36
37 Now, if we bump this first bullet here up to 70 percent, and we
38 don't adjust the rest of them, then, when we sum that age frequency
39 distribution up across all ages, it would come out to like 1.2,
40 and so then we would take that 1.2, roughly, and we would multiply
41 our two-plus number, and let's say 22,866,000, across that age
42 frequency distribution.
43
44 Then, when we summed up all those numbers-at-age, we would not
45 have a number quite a bit larger than 22,866,000, and so that last
46 bullet is just saying, once we determine what this starting point
47 is, keeping the relative difference between those other ages, and
48 we just scaled them up or down, such that the age frequency

1   distribution sums back up to one, and we didn't change our total
2   number of age-two-plus fish. Does that help at all?
3
4   **MR. BLANCHET:** Yes. Thank you.
5
6   **MR. SMITH:** Okay. Anybody else? I don't know if I can see the
7   hands anymore.
8
9   **CHAIRMAN NANCE:** I can't either. Anybody else? Matt, no. Go
10 ahead.
11
12 **MR. SMITH:** All right. Okay. I'm pretty sure this is where I was
13 at, and so, now that we have numbers-at-age, we've got to do our
14 projections, and we're doing projections, just like in the stock
15 assessment, that are going to be based on SPR ratios, rather than
16 an MSY type of thing.
17
18 The kicker with that, for an SPR, is you have to know what your
19 virgin biomass is, essentially, and we get an estimate of that
20 from the stock assessment, but that's going to be scaled to SEDAR
21 52 numbers, and it's not going to be representative of the Great
22 Red Snapper Count numbers, and so we had to come up with a way to
23 get at this virgin SSB, and we did that using an estimate of
24 initial depletion, and so, here in this simple equation, this first
25 simple equation, that's the denomination, SPR in 2019, and we
26 divide the estimate of SSB in 2019 by that initial depletion, and
27 that would give us an estimate of virgin biomass.
28
29 This works, as a simple equation here for red snapper, because we
30 don't have to consider, presently, virgin recruitment, since we
31 have a steepness estimate of 0.99 in the stock assessment model,
32 and that's the present assumption, and those two values will cancel
33 out, and we're essentially left with this biomass ratio.
34
35 This is the equation that we worked around to get around sort of
36 what the denominator for our projections would be, and what's this
37 SSB0, and we took the estimate of initial depletion from SEDAR 52,
38 and it was 0.207, with this corresponding standard deviation, and,
39 obviously, there is uncertainty around that, and we chose a single
40 year, and it's not estimated perfectly, and so, again,
41 deterministically, we used this single value as our estimate of
42 initial depletion.
43
44 In the Monte Carlo framework, we can take that initial value plus
45 the estimate of standard error, and we can do random draws and get
46 a range of different choices, and, again, this is just one
47 representation of that, and so the all structure 10 percent UCB,
48 but this is roughly what the distribution around that initial

depletion comes out to, and so you can see, potentially, in some
runs in the far right, the stock is already rebuilt, and the
standard we're trying to rebuild it to is 26 percent, and, in some
cases, it's much worse off than we thought it was, and we feel
that this kind of accurately, to a certain extent, represents the
amount of uncertainty that we have about initial depletion and
builds an additional layer of uncertainty into the Monte Carlo
simulation.

The last thing we need for our projections are fleet-specific Fs,
and we followed similar methodology, through our typical
projections, where we took a three-year average of the last three
years of data that we have available, and so, in this case, that
was 2014 through 2016 from SEDAR 52, and we took an average of
those to set the relative relationship among those fleets, and so,
for the deterministic projections, we just used those values.

In the Monte Carlo framework, we then randomly, using those values
as sort of our mean, with a CV of 0.1, randomly selected different
Fs, to introduce some uncertainty in the estimates of fishing
mortality by fleet, and then, finally, once we have the Fs, we use
the projections to adjust the overall magnitude, to achieve our
SPR target in equilibrium, and then we calculate catch using
Baranov's catch equation and all the different pieces that we have
produced from our projections.

Now we're getting into the results. We're going to see two
different sets of results, and the first set is going to be from
the deterministic projections, and there's going to be two tables.
One is going to be the equilibrium projection to F SPR 26 percent,
or of F SPR 26 percent, which could be potentially interpreted as
an OFL, and it follows a similar methodology as we use to produce
that in a stock assessment.

The second table will be the 75 percent of that F, which, again,
is a common thing that's used in the assessment process to come up
with an ABC when the uncertainty is poorly quantified. The next
set of tables are going to be all the Monte Carlo results.

CHAIRMAN NANCE: Matt, let's go ahead and -- I am going to ask if
there is -- Before we move into the results tables, I want to make
sure we don't have any questions or issues with the methods, and
so it looks like Sean Powers.

DR. POWERS: Sorry, Matt, and I raised my hand a while ago, but
can you go to SSB? When you said they're adjusted to the Great
Red Snapper Count value, which we know is the LGL and Great Red
Snapper Count value, is that all structure, 10 percent, 15 percent,

196

1 or are you -- For this calculation, do you use the overall Great
2 Red Snapper Count number?
3
4 **MR. SMITH:** This is going to be scenario-specific.
5
6 **DR. POWERS:** Okay. I was just wondering, because even -- I know
7 there is an issue of how much of it can be exploited, but I would
8 think, when you're doing the overall calculations of spawning stock
9 biomass and virgin biomass, you would use the overall Great Red
10 Snapper Count.
11
12 **MR. SMITH:** You certainly could, and there is a strong argument to
13 be made for that, and it's something we could look at, at the SSC's
14 request, if they would like, but, again, when we talked about it
15 internally, it comes down to what your assumption is. Is your
16 assumption of basically localized recruitment or that there is a
17 large kind of cryptic spawning stock biomass that is feeding the
18 ground, and I don't know if there is overwhelming evidence either
19 way.
20
21 We've seen some research coming out of the connectivity models
22 that have really highlighted the importance of local recruitment
23 for most of the Gulf, that they're very self-feeding, but there
24 almost certainly is a component of that offshore biomass that feeds
25 into it, and so it was a decision that we had to make, and we went
26 with this one, and I guess it's the more conservative approach,
27 and, obviously, the other one would potentially provide a much
28 larger SSB0 out there.
29
30 **DR. POWERS:** I can see where you're -- Because, obviously, we have
31 a good sense that depletion can be very localized, but whether
32 that spawning stock biomass -- Whether the recruits are local or
33 from a larger pool is a much more difficult question.
34
35 **MR. SMITH:** It is a very difficult question, and one you all are
36 going to have to wrestle with, because it has management
37 implications, obviously, but, for this case, we chose scenario-
38 specific for that SSB.
39
40 **DR. POWERS:** Okay, and so we don't have the scenario where you
41 just grouped it all as SSB. Got you.
42
43 **MR. SMITH:** Not for this presentation.
44
45 **CHAIRMAN NANCE:** Thank you, Sean. Mike Allen, please.
46
47 **DR. ALLEN:** Thank you, Mr. Chair, and thank you, Matt. I had a
48 question on this virgin biomass calculation. The SSB 2019, that

1 factors in the Great Red Snapper Count, and is that correct, in
2 the numerator of that equation?
3
4 **MR. SMITH:** Yes, it does.
5
6 **DR. ALLEN:** Okay, and then the denominator, SPR 2019, that doesn't
7 affect -- That doesn't take into account the Great Red Snapper
8 Count in that SPR calculation, and is that right, or does it?
9
10 **MR. SMITH:** That is correct, and there's really no way, outside of
11 the stock assessment process, for us to estimate what our current
12 depletion is. We have an estimate of current depletion, based on
13 that we thought we knew from SEDAR 52. With all these new values,
14 we can't estimate, using the Great Red Snapper Count information,
15 what SSB0 is outside of the assessment, and, without that Great
16 Red Snapper Count assessment-based estimate of SSB0, we can't get
17 a sense of what our actual depletion is, presently.
18
19 **DR. ALLEN:** I get that, and it's a chicken-or-the-egg thing, and
20 you need the assessment, but the point is though, if that SPR 2019
21 does not include the Great Red Snapper Count, then the SSB0 is
22 probably -- It will change once you run the assessment, right, and
23 that SPR, I would guess, would be lower than it is now, given the
24 Great Red Snapper Count, meaning that the SSB0 would be higher.
25
26 **MR. SMITH:** It could, and I don't have my crystal ball to know
27 which way it's going to go. My thinking on it was, potentially,
28 that, if we assume that the SEDAR 52 was basically an assessment
29 over the fishing grounds, it was collecting data from the fishing
30 grounds and the indices from the fishing grounds, it was more or
31 less an assessment of the fishing grounds.
32
33 It was saying that our SPR, in 2019, was 0.2. If, as the Snapper
34 Count suggests, there is a large amount of additional biomass out
35 there that is not over those fishing grounds, then it's entirely
36 possible that the Gulf stock-wide SPR is actually higher than 0.2.
37
38 **DR. ALLEN:** Right.
39
40 **MR. SMITH:** Again, we won't be able to advance that until SEDAR 74
41 is complete, and hopefully it provides us all with a satisfactory
42 answer, when it is, but, for this exercise, and we had to get that
43 SSB0 in order to get the projections to be able to function, and
44 this was the best we could come up with.
45
46 **DR. ALLEN:** I understand the quandary that you're in, but it is a
47 fair point that that SPR is not updated with an assessment that
48 includes the Great Red Snapper Count, and so that's something that

1 we should keep in mind, and, also, this concept of the stock that's
2 vulnerable to fishing, versus some other part of the stock, we're
3 going to have to wrestle with that, as far as what is the SPR, and
4 how do you interpret that, for the whole population.
5
6 I had one more question on this slide, and that SSB 2019 -- That
7 equation doesn't have biomass in it, and that's a total fecundity
8 estimate, right?
9
10 **MR. SMITH:** That is correct.
11
12 **DR. ALLEN:** Okay.
13
14 **MR. SMITH:** In the stock assessment model, our SSB estimates are
15 in eggs.
16
17 **DR. ALLEN:** Okay. Thank you.
18
19 **CHAIRMAN NANCE:** Dave Chagaris, please.
20
21 **DR. CHAGARIS:** Thank you. My comments were on the exact same point
22 that Mike brought up, and I'm really having a hard time
23 understanding how we can actually move forward with this, because,
24 if we have this estimate from the Great Red Snapper Count
25 introduced into the stock assessment, and says there's more fish
26 out there, then we would basically also assume then that the SPR
27 was higher in 2019 than what the stock assessment model was
28 estimating.
29
30 Let's just say that it was 0.3, or 0.4, and now you potentially
31 have cut your spawning stock biomass estimate, unfished spawning
32 stock biomass estimate, for the projections in half, which would
33 have, I am assuming, pretty profound effects on the catch advice,
34 and, on the other hand, if we assume that the Great Red Snapper
35 Count estimate is correct, and the SPR value is correct, then that
36 would imply that there's a large unproductive stock, which I think
37 would also have pretty big management implications.
38
39 Maybe, if you go back to the idea that the assessment model was
40 only modeling fish available to the fishery that were on structure,
41 then perhaps you could replace the numerator with the only on
42 structure Great Red Snapper Count estimate, to get a spawning stock
43 biomass, but, the way I see this now, I feel that the SSB0 that's
44 being used in the projections is probably way too high, potentially
45 double, what it should be, which would then raise the target values
46 higher and increase the catch levels. You might maybe help me to
47 understand how this works, because it seems like a pretty big
48 issue.

1
2   **MR. SMITH:** To that point, if I can, Chair.

3
4   **CHAIRMAN NANCE:** Yes, please, Matt.

5
6   **MR. SMITH:** I think Sean brought this up earlier, and you're 100
7   percent right, Dave, and there is all kinds of questions that are
8   around this, but Sean brought this up, I think, in his comment,
9   that this numerator, in this case, is kind of like what you were
10   suggesting there.

11
12   It is scenario-specific, and so, if we go back to our scenarios,
13   we have all structure, all structure plus 10 percent, and all
14   structure plus 15 percent, which are basically proxies for what
15   we're guessing may be vulnerable to the fishery, and so it's close
16   to apples-to-apples, and it gets us to what is at least a
17   reasonable-ish estimate of SSB0, but it also doesn't take into
18   account the other part of your argument at all, that the
19   denominator could be wildly inaccurate, since we don't have a stock
20   assessment to update it.

21
22   **CHAIRMAN NANCE:** Thank you, Matt. Thanks for the question, David.
23   Luiz, please.

24
25   **DR. BARBIERI:** Thank you, Mr. Chairman. Mike and Dave have already
26   addressed some of the points that I was going to bring up, but,
27   you know, on this same topic, and that same slide, the analysis
28   that we saw and reviewed last year did take into account those
29   scenarios of different stock productivities, depending on the
30   actual magnitude of the stock between what the assessment used in
31   that reference point choice, or estimate, that came out of there
32   versus using the numbers from the Great Red Snapper Count.

33
34   This analysis did not consider the SPR 40, and, basically, it's
35   limited to the SPR 26 percent, and can you help us understand? I
36   mean, I saw that in the actual writeup, the paper report that you
37   guys submitted, but can you help us understand why we decided not
38   to use that scenario?

39
40   **MR. SMITH:** Certainly. We didn't use it because it wasn't
41   requested this go-round. Last March, we didn't have a ton of
42   guidance, coming in that meeting, and that was sort of the first
43   run at this, and so, internally, we tried to think of how we could
44   produce catch advice that would at least be considered by the SSC,
45   and so the things we came up with were these scenarios of limiting
46   the number to all structure, or all structure plus some percentage
47   of the UCB, and the other thing we talked about was exactly what
48   you just said, is that, depending on how this all fleshes out, we

1 could realistically have a population that is larger, but less
2 productive, and so we produced a 26 percent.
3
4 Then, from looking at some of the Harford et al. recommendations
5 on SPR proxies, we went with 40 percent as an alternative, because
6 we didn't have really good marching orders at the time, and we
7 wanted to give the SSC a range of alternatives to consider for
8 both OFL and ABC during that meeting.
9
10 This go-round, after you all had reviewed that information, the
11 request that came through the SSC, and then through the council to
12 us, no longer included those runs, and so we didn't do them. They
13 could be done. I mean, the scripts that I have and the spreadsheets
14 are set up to do it fairly easily, but it just wasn't requested,
15 and so it wasn't done.
16
17 **DR. BARBIERI:** Okay. That makes sense. Thank you, Matt.
18
19 **CHAIRMAN NANCE:** Any other questions on methodology? Matt, it
20 doesn't look like there are any hands up, and so let's go ahead
21 and go into results.
22
23 **MR. SMITH:** Okay. Without further ado. Like I was saying before
24 the questions, this first slide has a deterministic projection
25 output on it, with the equilibrium F SPR 26 percent projections in
26 the top table and then the 75 percent in the bottom table.
27 Obviously, it's up to the SSC's pleasure to interpret these as
28 they will, but, internally, the F SPR 26 percent follows roughly
29 the methodology of an OFL projection, and the 75 percent roughly
30 matches what's been done for ABC projections when the uncertainty
31 around the resulting yield is less than what we think it should
32 be. All the catches you're looking at are in millions of pounds
33 whole weight, and I will take questions.
34
35 **CHAIRMAN NANCE:** Roy.
36
37 **DR. CRABTREE:** Matt, when I look at this, the amount of reduction
38 in the yield from the OFL is a little less than I expected at 75
39 percent, and is this assuming that the F 75 percent started in
40 2019/2020 and then was carried all the way forward, so that, in
41 the projections at 75 percent, the biomass is already larger than
42 it is in the other ones?
43
44 **MR. SMITH:** There's a couple of things going on here, Roy, and
45 that's a good catch. We could look at it a different way, and I
46 will talk you through what that other way is in a second, and so,
47 for this, we do the first one, and we get the F SPR 26 percent
48 value. For the second one, it's just a straight multiplier of

those Fs, but those Fs only apply to the directed fleets, and, for
anybody on the SSC who is new to the red snapper stock assessment,
there are a bunch of discard and bycatch fleets.

As we have done in the past for red snapper stock assessments,
those values are being held constant in the projections, and so,
whatever the Fs estimated for the shrimp fleet, the commercial
closed season discards, the recreational closed season discards,
and the recreational east closed season discard in particular,
which is quite a large F, those are held constant, and only the Fs
on the directed fleets are being multiplied by the 75 percent
reduction, and so you don't actually get a full 75 percent
reduction of the F, and it comes out to somewhere in like the low
80s, if I did the math, which I don't have it in front of me.

DR. CRABTREE: Right. Then are the different Fs only -- They start
applying in 2022, and the Fs are the same leading up to that, or
how did that work?

MR. SMITH: The Fs are -- It's a straight multiplier across all
the years, and so, from the start of the projections in 2017, where
our data runs out, it's the F 75 percent being applied the whole
way through.

To get at what you're saying, there is way where we could go in
and figure out what that multiplier needs to be, whether it be 65
percent or whatever, to the directed fleets, to wind up with an
actual 75 percent reduction in the exploitation rate, or sort of
the standard F, the removals over the biomass, but that wasn't
done here, because that's not -- It's different from the approach
that we take during the normal assessment cycle. When you ask for
something like this, you get essentially what you're looking at
now.

DR. CRABTREE: Right, and so I think it's reasonable to leave the
discards alone, but the odd thing about it is that the ABC is
higher, because it's projecting we are fishing at a lower F in
2021, and even before that, but, in reality, we weren't, and the
catches were what the catches are, and it's only once this
implemented, in 2023, that the buffer actually happens, and so
it's like you're not quite getting as much as you think.

CHAIRMAN NANCE: Plus, as he's saying, the other fleets, shrimp
and everything else, are held constant, and so you're not getting
that reduction out of those.

DR. CRABTREE: Yes, and, I mean, that's realistic, because they're
not going to be affected by what we do here, but you're not getting

1 -- If you think you're getting a real 75 percent reduction in the
2 Fs, you're not, and so that would argue -- Well, I'm not sure what
3 it argues, but I think I get --
4
5 **CHAIRMAN NANCE:** Let's just look at the results, and then we can
6 discuss ramifications. Any other -- Okay, Matt, go ahead.
7
8 **MR. SMITH:** Okay, and we'll have all these tables available to
9 look at for the discussion, and so don't try to memorize the
10 numbers now.
11
12 **MR. GREGORY:** Mr. Chair, before we move on, can we go back to that
13 table? On the bottom table, your three-year average and five-year
14 averages are identical, and so that needs to be looked at.
15
16 **MR. SMITH:** Good catch. My apologies for that. I knew this would
17 happen, and I was talking to Katie the other night. You give me
18 all kinds of stuff to do for homework, and I'm going to make a
19 little slipup, and so thank you for that catch. I will double-
20 check those numbers, but I don't have to do that live, and I will
21 fix them at the end of the presentation. Anything else?
22
23 **CHAIRMAN NANCE:** Thank you, Matt. Thanks, Doug.
24
25 **MR. SMITH:** Let me just make a note, real quick. Okay. Then the
26 next thing is going to be the Monte Carlo simulation approach to
27 uncertainty, and, again, this is just an example from that all
28 structure plus 10 percent run, and being shown here is the outcome
29 of all those different thousand simulation runs of the different
30 Monte Carlo draws. The middle dark line is the mean, which, in
31 kind of a traditional assessment sense, is something that would be
32 interpreted as an OFL, and the two dashed lines to the left
33 represent P* approaches to the data.
34
35 In table form, you wind up with this, and, again, here, you just
36 have all the different scenarios, all structure, all structure
37 plus 10 percent and 15 percent, with the means for each of them,
38 the standard deviations from the distribution, and then the values
39 that you get from applying the P* approach to this data. One thing
40 I will say, while you're digesting this --
41
42 **CHAIRMAN NANCE:** Roy.
43
44 **MR. SMITH:** Sorry. Go ahead.
45
46 **DR. CRABTREE:** Matt, I recall reading the written report that was
47 in the briefing book earlier, and, in the discussion of the P*,
48 there was a discussion that the P* doesn't -- It doesn't reflect

1 the actual uncertainty, and the actual uncertainty is greater
2 because there are other things that are uncertain that aren't dealt
3 with, and I know that's always the case with P*, but I'm right
4 that that's what it said, right?
5
6 **MR. SMITH:** Yes, and it almost certainly does. I mean, we were
7 surprised by the distribution of the landings, to be honest with
8 you, before we got into the Monte Carlo, but, as is the case, there
9 is numerous other parts of the assessment framework that were just
10 held constant, and the uncertainty around them were not
11 incorporated into this, and there is also uncertainty around the
12 UCB and numerous other things.
13
14 **DR. CRABTREE:** Is there any way to have some sort of gauge -- Let's
15 say we wanted to go with a P* of 40 percent. To better reflect
16 the uncertainty, is there any way to gauge how much additional
17 reduction would be needed to do that, or is there any way to get
18 at it?
19
20 **MR. SMITH:** I mean, potentially. The first thing that comes to
21 mind goes back to this Ralston paper, and we were just talking
22 about this earlier in the day, where, in that paper, in Figure 7,
23 it lays out sort of P*s and how they line up with the data richness
24 of the assessment they're coming from, and, from that analysis,
25 based on the P*s and the difference between the ABCs and the OFLs
26 that we're getting from what we're doing right here, we're still
27 considered to be in a data-rich situation, which, depending on how
28 you look at what we have, you may agree with or you may not agree
29 with.
30
31 If you disagree with that, that we have a data-rich approach here,
32 then you can potentially look at the Ralston paper in Figure 7 and
33 say, okay, what does he say we should be at for a medium, or a
34 data-poor, a data-moderate, or a data-poor situation, and use that
35 as a gauge. I don't have those numbers worked out, and this is
36 just something that we were spitballing around in a chat this
37 morning, but it's a possible avenue there, to kind of say, well,
38 how much is the difference we have from this, and what would we
39 expect the difference to be, given how we think the quality of the
40 data in this catch advice is.
41
42 **DR. CRABTREE:** Okay, and, Ryan, I guess, typically, the council
43 has used a P* of 40 percent in the past?
44
45 **MR. RINDONE:** We have typically run through the control rule, and,
46 if you give me just a second, I will pull up what we did after
47 SEDAR 52, and that would be the last time that we used it. I will
48 add though that the SSC has, for the last couple of years,

expressed consistent consternation with the difference between the OFL and the ABC, through the application of the P* approach, and I bring that up because there is no shortage of verbatim minutes to that effect.

Just because some of you are newer on the SSC, and so what Dr. Crabtree is referring to, as far as these differences, this is something that is getting to our current ABC Control rule has been the impetus for revisiting it. In the Ralston, and I think the other method that was talked about at one point was the Restrepo method, have been discussed as possible ways to revise that control rule.

DR. CRABTREE: Yes, and so it's been a long-standing problem, and we've often ended up with unrealistically small buffers. Now, in this case, it looks to me that the -- We don't have the other table, but that the buffer using the 75 percent is actually less than the buffer using the 30 percent here, or the 40, and so, okay. Thanks, Matt.

CHAIRMAN NANCE: Harry.

MR. BLANCHET: A bit to that point, I think that the P*, as provided here, because we are not -- This is not really parallel to our prior applications of P*, which have all been within SS, and, in this particular case, we have some additional variance in some of the inputs that we don't normally have when we're considering those full Stock Synthesis runs, and so we do end up with something that at least has a broader variance than what we would normally see coming out of Stock Synthesis, and so I don't know that these P*s are actually consistent, in every case, with what we have done normally, and I actually think that this approach may have some benefit, when we go back and look at that control rule.

CHAIRMAN NANCE: Thank you, Harry. Ryan.

MR. RINDONE: Just to answer Dr. Crabtree's previous question, the P* value that was used the last time, following the SEDAR 52 stock assessment, was 0.4.

DR. CRABTREE: Okay. Thank you.

CHAIRMAN NANCE: Okay. Matt, I don't see any more hands, and let's go ahead and go on with the results.

MR. SMITH: Okay, and this last one is just something that has bubbled up in the last two days, and we just can't help ourselves, and so this wasn't requested directly by the council, but we're

1 going to present it here, just in case it helps the SSC reach a
2 decision point on this.
3
4 We have covered uncertainty in a lot of the inputs into the
5 projections directly, and the one lingering uncertainty is this
6 percent UCB that you would potentially include in the numbers to
7 start with, and so what we've done here is just kind of take the
8 output from the three individual runs and combine them together
9 into what we're sort of calling an ensemble advice across the UCB
10 levels, and this will basically get you a mean estimate kind of
11 somewhere in the middle, and so I guess it would be about seven-
12 and-a-half percent UCB, but it's also going to effectively widen
13 the tails of that distribution, because you add in uncertainty
14 about what the proper UCB is for this analysis.
15
16 If you get wider tails in the distribution, the P* then is going
17 to have more effects when you implement it, and so this figure
18 here is just demonstrating the output of combining the, whatever
19 it was, 5,000 runs for each one of the simulation runs for each
20 one of the scenarios, together into a common distribution.
21
22 Then, when we look at that, the same similar table as what we saw
23 before, and I have these all put together in a final table that
24 you guys can look at when you're deliberating, this is what we end
25 up with, and so a slightly lower mean, because the UCB, on average,
26 comes out slightly less than 10 percent, when you combine all those
27 together, and then the P* values having slightly more effect,
28 because of the wider tails in the distribution.
29
30 Final thoughts, before I leave you to your business, is that we
31 are set up to run different percent Fs, and so, if 75 percent,
32 which has been commonly used when we're uncertain about the
33 uncertainty, if that doesn't satisfy the SSC, different Fs can be
34 run quite quickly, and different P* values can, obviously, be
35 looked at, and different UCB percentages can be done, if desired,
36 and certainly, possibly, by the end of business today, but
37 definitely by tomorrow, and then, again, this is, again, what Roy
38 brought up, and I believe it was Dr. Crabtree, that we did our
39 best with what we had available to us to try to build uncertainty
40 into this catch advice, but the full scientific uncertainty is
41 certainly not captured here.
42
43 That's the end of that, and then I've got a couple of tables at
44 the end that just kind of have the catch advice, and I will happily
45 cycle between them as you discuss.
46
47 **CHAIRMAN NANCE:** Thank you very much, Matt. Roy.
48

DR. CRABTREE: Can you back up to the table, Matt, that had the ensemble numbers that was just up? Would we interpret what is labeled the mean as the OFL?

MR. SMITH: You certainly can. I mean, that's at the pleasure of the SSC. As we were doing this, that's kind of how we were interpreting it. When you see something like this coming out of a standard stock assessment, that 50 percent probability, which is roughly the mean here of this distribution, becomes your OFL, and then an ABC would be a P*, or a reduction, on top of that.

DR. CRABTREE: All right, and so put that -- All right. The mean would be the OFL, and then the P* 40 percent, Ryan, would correspond to what we have used to determine ABCs in the past.

MR. RINDONE: That's correct.

DR. CRABTREE: Okay. Then the question becomes -- So you have a buffer there that is -- Well, I don't know what it is, but it's less than 10 percent.

MR. RINDONE: It's 1.2 million pounds whole weight.

DR. CRABTREE: So it's relatively tight.

CHAIRMAN NANCE: Okay. So, as we start to consider this, I'm going to take a break right now. The chance of taking a break after we start is zero, and so we'll take a break, and we'll come back at five to three, and so, at 2:55, we will come back and start our deliberations, and so go ahead and look through these tables, and I look forward to a good, robust discussion. Thank you.

(Whereupon, a brief recess was taken.)

CHAIRMAN NANCE: Okay, everyone, and I think we need to reassemble, and we've had that presentation from Matt, and, Matt, I appreciate you going through that, and I think it was an excellent job. It was very informative. I am going to open up the floor to questions. Doug.

MR. GREGORY: Thank you. I was trying to get in this comment before the break, so that people could think about it, but, contrary to what Harry was saying, these P*s are about half as conservative as the ones we normally use in our stock assessments, in that, normally, with a P* of about 0.4, we would have an ABC that is 10 percent less than OFL. In these tables, the presumed ABCs are about 5 percent less, and so, even with the combined scenario, ensemble scenario, these distributions -- These P*s are

1 coming out with numbers that are not realistic, given the
2 uncertainties in the document, or in the analyses.
3
4 Now, if you go back to Ralston, which seems to be our bible for
5 judging this, with a data-rich assessment, a P* of 0.4 would give
6 you a 9 percent reduction, on average. A P* of 0.3 gives you a 17
7 percent reduction, and so it's not much different than what we've
8 normally done with stock assessments.
9
10 Now, one of the questions that I would like to raise here is I
11 don't think this is a data-rich assessment, to begin with, as much
12 of the machinations that had to have been done to produce this
13 assessment, and so, if we went with this being more of a Tier 2,
14 or a moderate data assessment, in the Ralston tables, then our P*
15 of 0.4 would give us a 17 percent reduction, and 0.3 would be more,
16 and I haven't looked at that, but that's something to consider,
17 and, like Roy said earlier, the 75 percent of F of MSY isn't
18 providing a buffer either that makes us comfortable, and so we may
19 just have to negotiate an appropriate buffer for this analysis
20 that doesn't fit our control rule or what we've done in the past.
21 Thank you.
22
23 **CHAIRMAN NANCE:** Thank you, Doug. Let's go ahead. Trevor.
24
25 **MR. MONCRIEF:** Mr. Chair, do you mind if I take a step-wise
26 recommendation, or approach, here to this, so that we can kind of
27 guide our discussion a little bit?
28
29 **CHAIRMAN NANCE:** No, and go ahead, Trevor.
30
31 **MR. MONCRIEF:** I think it might be useful to kind of go step-by-
32 step on these, and I think the first one, to me, is this all
33 structure and all structure plus 10 percent and all structure plus
34 15 percent.
35
36 I think it would probably be a good idea to review the Gardner
37 analysis and maybe try to think about which percentage is more
38 applicable, in these scenarios, and kind of start whittling down
39 these options, and that's just a suggestion.
40
41 **CHAIRMAN NANCE:** Okay. We have that option, to look at the Gardner
42 paper, and we have a presentation on that, and so let's see if
43 there's any other comments, and then we may go to that, Trevor, so
44 we can figure out -- We can whittle it down to whether it's going
45 to be all structure, all structure plus 10 percent, all structure
46 plus 15 percent, or maybe another one. Sean.
47
48 **DR. POWERS:** I have a question relevant to that as well, but I

1 will save that for a second. Matt, how does this new analysis, or
2 catch advice, change our perception of east versus west? That's
3 something I am interested in. When we went through these steps -
4 You know, before, we, obviously, thought that much more of the
5 biomass was in the west than the east, and does this level it out?
6 Have you all looked at that consequence?
7
8 **MR. SMITH:** It's not as dramatic as it was in SEDAR 52, because,
9 again, we -- In these projections, we kind of leveled the playing
10 field a bit at the start, and the starting biomass is -- Well,
11 it's a little bit less in the west, and more in the east, but then
12 we're still using relative Fs derived from SEDAR 52, and the Fs in
13 the east are quite a bit higher than the ones from the west.
14
15 When you combine those two things, they kind of play off of each
16 other, and it doesn't give you the same biomass trajectories that
17 we're using to seeing exactly from the stock assessments, where
18 the east tends to crash and our projections in the west just goes
19 up and up and up. There is still some of that dynamic, and it's
20 driven by the Fs, but it's not as pronounced as it was in SEDAR
21 52, but, in order to get a real full look at what you're talking
22 about, that's going to come through the assessment model.
23
24 **DR. POWERS:** Okay. When you say it's driven by the F, that's often
25 the role that F has on the size distribution, right, we think, and
26 so a little bit of this is back to my comment about the size
27 distribution, because some of us in the Great Red Snapper Count,
28 obviously, saw a lot more fish in the east, but the size frequency
29 was very different than the west, and, in looking at your two
30 curves, I'm not sure that captures the size frequency differences
31 that we were seeing, that we've seen in earlier studies, earlier
32 assessments, and so I guess that's my question. By F, you might
33 what it does to the size frequency?
34
35 **MR. SMITH:** Yes, by way of the selectivities, and we've got all
36 the different fleets in the model, or in the projections, and each
37 one has their own selectivity, and then they also had Fs estimated
38 from SEDAR 52, and we kept the relative ratio of those Fs constant,
39 and then we just scaled the magnitude in these projections, and so
40 there is still some of the holdover of the dynamics from 52, in
41 terms of the relative magnitude of Fs, say between the private
42 charter east and the private charter west fleet, for example, and
43 those dynamics are still in place. Then, yes, through the
44 selectivity, they impact the composition.
45
46 **DR. POWERS:** But the Great Red Snapper Count should be -- It's
47 fisheries-independent, and so the size frequency should be more
48 closely related to the fisheries-independent, possibly the video

1 gear, that has a very different selectivity, and I guess that's my
2 concern about using the abundance estimate but not the size
3 frequency, but I have already talked about that enough.
4
5 The point that Trevor was bringing up with the -- Can you explain
6 the model, and, when you combined the zero, 10, and 15 percent,
7 and is that simply a model averaging approach to that scenario?
8
9 **MR. SMITH:** Yes, essentially.
10
11 **DR. POWERS:** So that would be the same as saying that there is 7
12 percent uncharacterized bottom?
13
14 **MR. SMITH:** I didn't do a seven-and-a-half percent. I mean, it
15 would be a little bit closer, and you would be averaging the
16 results of the zero percent and the 10 percent and the 15 percent,
17 and so it's probably in the 8 percent range of so, and I haven't
18 done a run to confirm that, but, yes, the mean from that is going
19 to be equivalent to something like the 8 or 9 percent.
20
21 **DR. POWERS:** Okay, and so that feeds into Trevor's point that we
22 should look at that, and I agree with that as a first step, Jim.
23 All right. Thanks.
24
25 **CHAIRMAN NANCE:** Thank you, Sean. Luiz.
26
27 **DR. BARBIERI:** Thank you, Mr. Chairman, but my comments are more
28 general in nature. If follow Trevor's, and I don't know how you
29 want to proceed, but, following Trevor's recommendation there that
30 we address this step-by-step, and maybe if we go to the next
31 presentation on the --
32
33 **CHAIRMAN NANCE:** I think that's a good point, and let's go ahead,
34 and we're going to go to the Gardner analysis updated presentation,
35 and I think this is -- The one that we sent out just a few minutes
36 ago is an update, and is that correct? So everybody should have
37 that in their email, and I'm sure who from the Center is going to
38 give this presentation.
39
40 **DR. WALTER:** Mr. Chairman, I will present it.
41
42 **CHAIRMAN NANCE:** Thank you, John. We appreciate you being here.
43 Go ahead, and let's go through this presentation.
44
45 **DR. WALTER:** All right, and thanks, everyone, for bearing with us,
46 and we did update the presentation based on some of the decisions
47 yesterday, and I would give a big shoutout to Chris Gardner for
48 doing that really quickly.

1
2 The presentation is a little long, and so I will skip over some
3 slides that are probably not immediately pertinent to the decisions
4 before the committee today, and so allow me that, to try to
5 streamline our conversation.
6
7 **CHAIRMAN NANCE:** I think that's a good idea, John. Thank you.
8
9 **DR. WALTER:** Okay. We did this analysis to evaluate the spatial
10 footprint of the commercial and recreational fishery, to determine
11 what area of the population might be fished by the fishery, to
12 inform the percent structure, or the percent UCB, that might be
13 most likely, and I will give the punchline, is that there is
14 definitely fishing in UCB.
15
16 One would have to say that the fishery's footprint extends into
17 the UCB, and probably extends up to the 15 percent, and perhaps
18 beyond, and we can't put a hard-and-fast number on what that would
19 be, and that's part of the rationale behind the integration
20 approach that Matt showed, where, if that is the key uncertainty,
21 in terms of how much UCB is likely fished, that could be addressed
22 in an integrated probability distribution, and perhaps the P*.
23
24 Our objectives, as I went over, and they should have been numbered
25 from 1 to 5, but, primarily, I think I went over them. The two
26 maps we have that define at least where we think the population
27 was, or we used to, was the Karnauskas et al. spatial mapping that
28 comes from data from mostly 2010 and 2011.
29
30 The Great Red Snapper Count gives a spatial mapping, if you apply
31 it to the depth and regions, that would look like the map on the
32 right, which would have a substantial biomass in the Big Bend, and
33 there is the potential, and it seems like biomass may have
34 increased in some regions, relative to where the Karnauskas et al.
35 mapping would be, but the Great Red Snapper Count's goal, and
36 objective, was not to provide a spatial map. However, for the
37 purposes of overlaying fishing and the biomass, we need to derive
38 our best map of the population.
39
40 We did this, and we went over the commercial estimates, and there
41 is a published paper on this, and I won't go into it, and it used
42 VMS data, and we had an excellent presentation from our colleagues
43 on VMS utilization and how it was derived.
44
45 This is putting the commercial red snapper handline catch, which
46 is 96 percent of the catch, in space, and you can see where most
47 of the catch comes from. The one thing I will highlight is that
48 there is not a large amount of commercial catch coming from that

1   Big Bend area. For whatever reason, it doesn't seem to have a lot
2   of removals from there, despite the Great Red Snapper Count biomass
3   estimates saying that there is indeed a lot of biomass there, and
4   we don't know the reason for that mismatch, necessarily.
5
6   This is essentially the landings, and then the key take-home is,
7   where we can assign where they are occurring, on natural or
8   artificial structure or unknown, with a lot of the landings
9   throughout the Gulf coming from artificial structures in the
10 commercial fishery.
11
12 Then here is a fairly detailed slide of how we partitioned the
13 recreational catch. In brief, we used the best state-specific
14 data we could get, and some of it is a combination of observers,
15 or dockside interviews for Florida, or some of the state surveys
16 that are going on that collect spatial or depth-specific
17 information, and we vetted these, the best we could, with the
18 state-specific experts.
19
20 In particular, we had a figure that we presented in January that
21 showed, for Louisiana, a spatial distribution that didn't seem to
22 match with where the fishery likely occurred, and we polished that
23 up using data from LA Creel and from dockside interviews, to try
24 to get a much better partition of where that occurs, and you will
25 see that in the map that we showed.
26
27 Originally, we had a map that looked like the one on the bottom-
28 right for Louisiana that showed catch in a lot of shallower
29 regions. However, by kind of getting that more state-specific
30 information assigned to the BOEM grid and the depth, we were able
31 to probably put those removals by the rec fishery into a better
32 space and place on the seafloor, and that figure is the upper-
33 left, and so this is our best estimate of where the 2019
34 recreational landings occur in space, and you can see the red
35 hotspot in and around the Alabama artificial reef zone and the
36 Panhandle of Florida, where a substantial amount of the
37 recreational catch does come from.
38
39 Then here is combining the recreational and commercial catch in
40 space, to get a total catch distribution. Then, to be able to get
41 an exploitation rate, which is our proxy for the spatial footprint
42 of effort, we needed biomass distributions, and, here, we are using
43 and evaluating four different biomass distributions.
44
45 The first one is taking the biomass of the Great Red Snapper Count
46 estimate, or 96.7 million fish, and scaling them to their state
47 estimate, but then, within a state, scaled, or smeared, according
48 to the Karnauskas et al. spatial distribution, and that means that

1 we applied the Karnauskas distribution within a state, but the
2 Great Red Snapper Count total to that state, and that reflects
3 that the Karnauskas spatial model accounted for known structure
4 within those states, and so at least we could probably put those
5 fish a little bit more accurately to the structure, depth, or
6 habitat that they might have occurred on.
7
8 The second figure is the second distribution, which allocates to
9 depth within the Great Red Snapper Count, but partitioned the data
10 to depth, and you can see, in that case, that it placed more fish
11 in the deeper waters, and the reason for doing this is that there
12 was spatial partitioning to depth and region, and it was the second
13 step to motivate the post-stratification analysis of the Great Red
14 Snapper Count.
15
16 This is the biomass distribution with the post-stratified Great
17 Red Snapper Count numbers, and we were either lucky or prescient
18 that this post-stratification is only the post-stratification of
19 Florida, and so that was the ultimate decision, I think, for the
20 SSC, and so we kind of got -- In that case, we were presenting
21 what was ultimately decided on, and the left is not allocated --
22 It's allocated solely to Karnauskas within the state, and on the
23 right is allocated to depth bin, and, in this case, the key
24 distinction is it moves a lot of the fish in the Big Bend region
25 into that deeper water of the twenty-five to forty depth bin and
26 further out.
27
28 This seems more in line with where our survey data is placing those
29 fish in space, in particular because the surveys don't see high
30 catch rates in the ten to twenty-five-meter depth bin.
31
32 This is the new slide that has the LGL data for Louisiana inserted
33 and replaced the Louisiana data for the Great Red Snapper Count,
34 and the spatial maps are not particularly different than what was
35 before, but it's just simply that the total numbers are different.
36
37 On this slide are the exploitation rates, and these are dividing
38 the catch that would occur for each of the catch analyses that
39 Matt had shown by any one of the particular spatial distributions,
40 and what we do, in later slides, is average over these spatial
41 distributions, because we ultimately don't know which one is
42 exactly correct, and it turns out that the spatial distribution is
43 not that particularly influential in the ultimate result.
44
45 The catch analyses are using either the 96.7 million, and you will
46 see the 94.3 million, and you will probably ask where did this
47 come from, and that was an original post-stratification of the
48 Florida numbers, and I think now we have moved on even from there,

1 so that we have the numbers with the Louisiana LGL numbers replaced
2 for Louisiana, and so none of these have the correct absolute
3 numbers, and so take the exploitation rates here with a grain of
4 salt as relative, but a spatial map is likely to look the same,
5 but it's just going to simply be scaled up or down, in this case,
6 with lower total numbers, and you can see where the exploitation
7 rates are highest.
8
9 Here is for the catch with the all structure plus 15 percent UCB,
10 and all that does is increase the redness of the red, because it's
11 higher catch based on a larger catch total. Then here is with the
12 LGL, but it's really not -- It's a fine distinction.
13
14 Then this is a table that we have shown before, which is the --
15 When we take the number of grid cells and calculate their
16 exploitation rate, we can look at what fraction of the total
17 biomass is available to different exploitation rates. Prior to
18 this, we had said that an exploitation rate of 1 percent was
19 basically below that unexploited and above the exploited, up to a
20 fairly -- Then to a fairly high level.
21
22 Before, our spatial mapping said that only about 37 percent of the
23 total biomass was at that 1 percent exploitation rate. Here, based
24 on our new spatial analyses, we're seeing about 45 percent of the
25 total biomass is available, which is larger, which says that the
26 footprint, based on the new spatial mapping, and the revised
27 spatial maps, is a little bit larger for the fishery. This is
28 essentially the same slide, but with the LGL analysis.
29
30 Then this is the overall population exploitation rates, and this
31 is -- The basic message here is that, if one assumes a similar
32 footprint of fishing, but higher total biomass, what would the
33 resulting population exploitation rates be for different total
34 catch estimates from Matt's analysis?
35
36 On the top is the exploitation rate, taking the SEDAR 52 total
37 numbers from the 2016 biomass estimates, and then fishing them
38 according to each spatial distribution, which indicates a higher
39 exploitation rate for each one of those, as one would expect,
40 because the total population is estimated to be lower than what we
41 are now estimating with the Great Red Snapper Count numbers.
42
43 Then you can see, if you were to fish according to all structure,
44 or all structure plus 10 percent, or plus 15 percent, you would
45 get increasing total exploitation rates over the entire fishery,
46 and it's still not approaching the SEDAR 52 exploitation rates.
47
48 This is the same slide with the LGL, and we can move on from that,

and it's essentially the same, and so this is taking that figure,
but partitioned by region, and what is striking here is that the
exploitation rates that are estimated for -- These are the six
different spatial regions, and northwest Florida being essentially
the Panhandle, and the Florida mid-region being the Big Bend, and
south Florida being Tampa and south, and we see the exploitation
is much higher for Alabama-Mississippi and the northwest Florida.

This is essentially similar results as what was found in the
exploitation rate estimates from the high-reward tagging studies
in the Great Red Snapper Count as well as other studies that have
identified these areas as areas of higher exploitation, and it's
the areas of the greatest removals, and so it's not particularly
surprising, but what you can see is the increase in exploitation
at each one of the different catch scenarios.

The 2019 exploitation is, if we took the 2019 catch divided by any
one of the biomass scenarios from the Great Red Snapper Count, and
so it's raising the biomass and then taking the 2019 catch, and so
this is essentially saying, if the biomass was at the level of the
Great Red Snapper Count, how much increased exploitation rate would
we be seeing, and where would we be seeing it, and, in this case,
we would be seeing the most increase in exploitation in the two
regions with the highest existing exploitation, and so the question
before the SSC is where are we likely to see the impacts and what
might the implication of those impacts be, and this is where it's
likely to be.

The implication is that we might see exploitation rates increase
on the order of about -- From about 0.3 to 0.4, and so maybe a 0.1
increase in exploitation in both of those areas. This is
essentially, I think, the same, but with the LGL, and so it's kind
of a duplicate.

I think it's informative, and this is a slide that we also just
added, and it's new, and I think it also adds a little bit of
context of where the catch comes from, where the biomass is
distributed, what the exploitation rates are, and there is an added
blue line, which is the exploitation rate of the 2019 catch divided
by the SEDAR 52 abundance, and so this is the spatially explicit
exploitation rates based on SEDAR 52 abundance, and you can see
they are higher than what would be estimated if the biomass was
higher than for the Great Red Snapper Count.

Then you can see in the total catch by each of the regions, and
the total biomass distribution, and the thing that I want to
highlight here is the inference that we're getting on the spatial
distribution of catches change fairly substantially, where,

215

1 previously, if we were to map biomass, according to Karnauskas, we
2 would have this blue line, the blue bar, reflecting higher biomass
3 in the west, in Texas and Louisiana.
4
5 The Great Red Snapper Count is telling us, in this case, if we
6 took the same biomass and mapped it, according to the Great Red
7 Snapper Count, we would get the green bars, which would shift that
8 biomass to the Big Bend and south Florida, and this is reflected
9 in the figure on the right, where the red line is total increase
10 in biomass and where it's occurring, and then the X-fold increase,
11 and so we see a sevenfold increase in biomass in the Big Bend,
12 based on what we would have originally allocated it spatially, and
13 originally estimated in SEDAR 52.
14
15 Then the resulting exploitation rates, and likely the increases in
16 catch that would occur, based on the analyses, would play out in
17 northwest -- The Panhandle and Alabama-Mississippi, and not
18 necessarily in the Big Bend region, because the footprint of
19 fishing doesn't appear to be occurring there, at least according
20 to our 2019 estimates, and the question then, kind of pulling in
21 the picture on catch distribution, on effort distribution, is, if
22 the fishery could reallocate spatially, it might be able to access
23 more of that biomass. I think the conclusions I have largely gone
24 over, and I will end there and take any questions. Thanks.
25
26 **CHAIRMAN NANCE:** John, thank you very much. Are there questions
27 from the SSC? Sean.
28
29 **DR. POWERS:** John, can you go over ahead -- How did you get biomass
30 from the Great Red Snapper Count, since we only gave numbers?
31
32 **DR. WALTER:** We made assumptions on the numbers and the age
33 distribution, from using the stock assessment age distribution and
34 length-weight relationships, to turn it into a biomass estimate.
35
36 **DR. POWERS:** Okay, and so you didn't use -- Like, for Florida, you
37 didn't use the length frequencies that Patterson came up with or
38 the stuff we reported?
39
40 **DR. WALTER:** No, we did not. For better or worse, we did not use
41 those individual pieces, and that's just been our challenge of
42 trying to incorporate -- The same in the catch advice and the
43 multiple different pieces. While they're valuable, it's just been
44 our challenge, in the time of incorporating them.
45
46 **DR. POWERS:** Yes, and I'm just wondering -- I mean, this one is
47 even more of a point, since we think there's been this change in
48 where some peak abundance is, and did that correspond to a change

1   in the size frequency as well, and, I mean, is there even more
2   younger fish than we thought, than the last stock assessment gave
3   us, for example.
4
5   **CHAIRMAN NANCE:**   John, did you hear the question?
6
7   **DR. WALTER:**   I heard the question, and I will repeat it, and it
8   was are there more younger fish than we had thought before, and,
9   while there is more fish, at least in our assumed analyses, on the
10 age composition, since we're using the age composition from the
11 assessment, we're not necessarily reflecting local, or the
12 conditions locally, other than what the assessment is saying.
13
14 **DR. POWERS:**   Okay.
15
16 **CHAIRMAN NANCE:**   Thank you, sir. Roy.
17
18 **DR. CRABTREE:**   One of the slides, along the way here, that showed
19 the various exploitation rates and had the SEDAR 52 exploitation
20 rate, and, under all these scenarios, the exploitation rates, based
21 on this new analysis pulling in the Snapper Count, are lower than
22 what was estimated in SEDAR 52, and am I correct about that?
23
24 **DR. WALTER:**   That's correct. With the larger biomass increase,
25 that's correct.
26
27 **DR. CRABTREE:**   So, if we went with say just the -- Hypothetically,
28 the ensemble analysis that Matt showed us, with the 0.3 or 0.4 P*,
29 we would have a slightly somewhat higher ABC than we have
30 currently, but, based on this analysis at least, the exploitation
31 rates would be lower than what they were estimated to be in SEDAR
32 52.
33
34 **DR. WALTER:**   That is correct, with a large number of caveats to
35 that assumption.
36
37 **DR. CRABTREE:**   Right. Okay. Thanks.
38
39 **CHAIRMAN NANCE:**   Thank you, Roy. Will Patterson, please.
40
41 **DR. PATTERSON:**   John, back to the questioning that Sean had about
42 the size composition and the age composition of the samples that
43 we -- The distributions we estimated using stereo cameras on the
44 ROV in Florida, versus the size and age composition coming from
45 the assessment, and I realize you had to make a choice of which to
46 use, but did you look at the difference in those distributions,
47 because what we estimated in Florida were predominantly small,
48 young fish, and most of the samples that we saw, most of the fish

1 that we saw, were less than 500 millimeters, and the mode was
2 around 350. I don't know -- I haven't looked back to see what
3 that distribution estimate is from the assessment, but I imagine
4 there could be quite a big difference there.
5
6 **DR. WALTER:** That's a good point. We used the region-specific
7 average weights, and I can pull them, to see whether they match,
8 or jibe, with the length frequencies, and so maybe bear with us,
9 and I can pull them.
10
11 **CHAIRMAN NANCE:** Thank you, John.
12
13 **DR. WALTER:** I don't mean to say hold off on questions while I
14 pull them. It's going to take a couple of minutes.
15
16 **CHAIRMAN NANCE:** Okay. Will, do you have any other questions?
17
18 **DR. PATTERSON:** No, and I was just curious if they had looked at
19 that when they were making their --
20
21 **CHAIRMAN NANCE:** Okay. While he takes a look at that, we'll go
22 on. Benny.
23
24 **DR. GALLAWAY:** In addition to the size differences, comparing the
25 available data that I've seen, there is a big difference between
26 Florida and the western Gulf, and, also, as I looked at those maps,
27 I was struck by the obvious effect of the Mississippi River and
28 the division, apparent division, of a map that's different in the
29 east from the west, with a big hole in the middle, and has there
30 been reconsideration of running the stock assessment in the eastern
31 and western Gulf, with some arbitrary division between that, and
32 I think recommended, historically, has been the mouth of the river,
33 and, as I look at that, I think it would make a huge difference in
34 the management advice that might come out of that, and so is that
35 being considered east and west, or is that still being swept under
36 the rug?
37
38 **DR. WALTER:** I don't think that there's a sweeping under the rug,
39 Benny.
40
41 **DR. GALLAWAY:** I'm sorry about that.
42
43 **DR. WALTER:** I think I would say that the SEDAR stock structure
44 working group would -- All of their extensive work on that would
45 -- They would probably want to say that that -- Not have their
46 work represented as sweeping under the rug, because I think there
47 was a deep, deep, deep dive into those things, and I would actually
48 let the chair of any one of those working groups, of that stock

1 structure working group, weigh-in, because I think people put a
2 lot of effort into that, your exact question, and I would defer
3 that question to the experts.
4
5 **CHAIRMAN NANCE:** Ryan has his hand up. Ryan.
6
7 **MR. RINDONE:** Thank you, Mr. Chair. The fact of the matter is, at
8 the moment, it's managed as a single Gulf-wide stock, despite the
9 fact that the assessment actually assesses it as an eastern and
10 western Gulf component and then puts that together, in the end,
11 and the stock ID working group for SEDAR 74 actually identified
12 three different regions for stock consideration, but that whole
13 effort needs to go through the formal stock assessment process
14 before it's ultimately adopted, or recommended for adoption for
15 management, and so we're still a little bit of a ways off before
16 being able to really leverage the hard work of that stock ID group.
17 That's kind of where we stand right now, and so it's still Gulf-
18 wide, because that's how it's managed right now.
19
20 **DR. GALLAWAY:** But there is some evidence that some of the working
21 groups are considering more division than presently a single-Gulf
22 analysis?
23
24 **MR. RINDONE:** Yes, and there has always been conversations about
25 there being an eastern and a western Gulf component, as long as I
26 have worked for the council, and so eleven years now, and so
27 there's always been these discussions, and there has always been
28 management reasons presented for and against any sort of division
29 to that respect, but it will be interesting to see how things shake
30 out from SEDAR 74, with this more contemporarily-informed
31 recommendation from the stock ID group about where stock divisions
32 actually occur.
33
34 **CHAIRMAN NANCE:** Thank you.
35
36 **DR. GALLAWAY:** Thank you.
37
38 **CHAIRMAN NANCE:** Paul.
39
40 **DR. MICKLE:** I appreciate it. Thank you, Mr. Chair. Just a
41 comment, and I think it's -- I enjoyed the presentation, because
42 it allows us to look at it kind of on the fly, and what we talked
43 about yesterday really fits in, but I want to emphasize, and I
44 guess ask the question, about the Slide 13 of the version that I
45 have, of the relative -- Let's see, the exploitation, the relative
46 exploitation, and I understand it's relative in the comparison of
47 it, but it's just hard to grasp that the exploitation rates are
48 almost similar off of Alabama and Mississippi and eastern Louisiana

1 when the structural densities and the habitat types are so
2 different between that central area.
3
4 I know that it's relative, and it's based on a little bit different
5 -- But it almost seems a little bit misleading, at least from my
6 understanding, or misunderstanding, but the commercial and the
7 recreational catches, on the previous maps, as we've seen in the
8 reports and this presentation, they seem to jibe with kind of what
9 I understand off of those states, but the exploitation rates just
10 seem a little bit misleading in the central area of the Gulf, and
11 I was going to ask the group if they feel similar to that, some of
12 the state managers, or not, because that's just -- When I reviewed
13 this, when I prior reviewed it, it just seemed that the
14 exploitation rates didn't really make sense with what the fleets
15 are doing out there, at least off of that centralized area, or
16 that pocket off of Mississippi, eastern Louisiana, and south of
17 Alabama. Thank you.
18
19 **CHAIRMAN NANCE:** Thank you, Paul, and, if any state managers have
20 any input, we can put you on the list here. Jim Tolan, please.
21
22 **DR. TOLAN:** Thank you, Mr. Chairman. I put my hand up originally
23 to address the question that Benny had thrown out there about if
24 we're going to maintain the dividing line at the Mississippi River,
25 and, having headed one of the workgroups for the stock ID, and I
26 was in charge of the landings and CPUE workgroup, and our
27 recommendation was to move it much farther east, whether it be the
28 Florida/Alabama line or the Cape San Blas area off of Florida, and
29 so I think that's still out there.
30
31 There is a two-stock-structure piece of information and a three-
32 stock-structure recommendation, but I think Ryan covered it pretty
33 well, and so, yes, those questions are being addressed, and I think
34 the upcoming SEDAR 74 workshop is going to settle a bunch of those,
35 but that's the reason that I put my hand up. Thank you.
36
37 **CHAIRMAN NANCE:** Thank you, Jim. Benny, to that point? While he
38 is unmuting, Will.
39
40 **DR. PATTERSON:** Sorry, and I just left my hand up.
41
42 **CHAIRMAN NANCE:** Okay. Thank you. John.
43
44 **MR. MARESKA:** In response to Paul Mickle's question, definitely
45 there appears to be a mismatch in the exploitation where the
46 structure is and where the biomass is, and so I don't know if
47 that's just the graphic, but, yes, I see the same thing that he
48 sees.

1
2   **CHAIRMAN NANCE:** Thank you, John. Any other comments? Jim Tolan,
3   please.
4
5   **DR. TOLAN:** Thank you, Mr. Chairman. I will only add one more
6   thing, in that graphics that are up right now are really kind of
7   telling, because our original dividing line at Cape San Blas sure
8   looks like it makes a lot of sense now, given these two maps, and
9   so thank you.
10
11 **CHAIRMAN NANCE:** Good prophecy, Jim. Mandy.
12
13 **DR. KARNAUSKAS:** Thanks, Mr. Chair. I wanted to respond to Paul's
14 question, and so these exploitation rates are a function of two
15 things, both of which have a series of assumptions that go with
16 them, and then, of course, the assumptions get compiled when you
17 divide them, and so it's a function of the landings and the
18 abundance, and so I would encourage you to look at the plots of
19 the assumed landings distribution, which is Slide 9, I guess, and
20 then the base map of the Karnauskas et al., which is Slide 3, and
21 that would kind of tell you where -- If the exploitation rate is
22 overestimated there, which of those inputs looks wrong, and,
23 essentially, if the exploitation is higher than what seems
24 reasonable, either the abundance is underestimated or the landings
25 are overestimated, and so that might shed some light onto why it
26 looks that way, and we could look at some of the model assumptions,
27 to try and pick that apart.
28
29 **CHAIRMAN NANCE:** Thank you, and I think that's an excellent
30 suggestion. Benny, are you able to respond?
31
32 **DR. GALLAWAY:** Yes, and I was just going to ask to re-look at the
33 same maps, and I think these two are good enough to make the point
34 that I was trying to make, and, if you put some of the other
35 distribution maps up, I think you will see some odd -- Some
36 differences that seem to be important, to me.
37
38 **CHAIRMAN NANCE:** Okay. Thank you. John.
39
40 **DR. WALTER:** I just wanted to return to Paul's point, echoed by
41 John, about -- To identify which areas are the exploitation rates
42 not seeming to jibe with your understanding, and maybe we could
43 pull up Slide 13, and I just want to get a clearer idea, and is it
44 right below Mississippi, or is it below the river?
45
46 **CHAIRMAN NANCE:** Paul.
47
48 **DR. MICKLE:** I would really rely on the managers, and I'm no longer

1   a manager, and so it would be best for the states to really answer
2   those, because they are just a lot closer to the fisheries than I
3   am presently, and so I will turn it over to there, but, you know,
4   it's -- I guess we need to make sure that the group understands
5   what relative exploitation -- How that's calculated.
6
7   I understand it further, and I've been reading about it quite a
8   bit this week, to get prepared, but, if we know that exploitation
9   rates are based on these metric going in, then we really need to
10 get some understanding about the data that's going in there and
11 some of the -- I guess the identification of some of the data and
12 landings from the small states that are struggling with some issues
13 on certain programs, and so it's really important to understand
14 the weights of those going in and the calculation of the relative
15 exploitation and what that means.
16
17 There might need to be some -- Almost like some power buffering or
18 weighting that goes into these exploitation rates, as similarly
19 that goes on with some of the other data streams, and that's all
20 I have to say. Thank you.
21
22 **CHAIRMAN NANCE:** Thank you, Paul. Trevor.
23
24 **MR. MONCRIEF:**   Thanks, and I will try to speak somewhat
25 specifically to it, and so, if you look at the Figure 2, 2019
26 estimated recreational landings, I think kind of what Paul was
27 getting at here, and what's driving where those hotspots are and
28 everything else, is the distance offshore that those landings are
29 occurring.
30
31 I understand that Mississippi is a small piece of the pie, but our
32 fleet is relatively shallow, and they do not travel very far
33 offshore, and so I think that's where some of this disparity is
34 occurring, is you've got this large amount of landings coming from
35 an area that is fairly far offshore, and, I mean, that's a pretty
36 good run across-the-board, and I think that is what is driving the
37 red, and the other figures as well, and so, yes, I'm trying to
38 match all these things across, and so I think that's where the
39 confusion is coming from.
40
41 I wanted to point out one potential data source, and I should have
42 sent this along when we originally got it, but I was afraid that
43 the analysis had already gone too far, and I didn't want to throw
44 a wrench into things, but Gulf States, and the descending device
45 and barotrauma project that's going on there, led up by Charlie
46 Robertson, and they sent out a survey, across all the Gulf states,
47 to the recreational fishery.
48

1 It essentially asked some of these questions about how deep are
2 you fishing and the areas that you're fishing in, and that could
3 be somewhat informative this, and, in reading through what was
4 provided for each state and everything, I think there might be --
5 That might have a potential possibility to be able to help inform
6 and maybe alleviate some of the disparity that's being observed,
7 and so I just wanted to make that comment.
8
9 I know it's probably -- We're pretty far along in this analysis,
10 and I know that we're expected to move through this and to make a
11 recommendation, but I think that might be a potential source in
12 the future.
13
14 **CHAIRMAN NANCE:** Trevor, thank you for that input. Jim, please.
15
16 **DR. TOLAN:** I will yield, Mr. Chairman. I never lowered my hand.
17
18 **CHAIRMAN NANCE:** Okay. Sean.
19
20 **DR. POWERS:** This question is for Mandy or John, and Paul mentioned
21 that these are relative exploitation rates, and is that right?
22 These are just exploitation rates, correct?
23
24 **DR. WALTER:** The reason we say they're relative is because of a
25 lot of the assumptions that are here. If one were to take it at
26 face value, it is our biomass -- Or our catch divided by biomass,
27 and so it would be an absolute exploitation rate. However, as you
28 can see, there are rates that are above one, which is physically
29 impossible, and that's just because there is some spatial mismatch,
30 and/or temporal mismatch, that goes on here when we're doing this
31 at the finer ten-kilometer-by-ten-kilometer block scale, and that
32 is why it's safer to say that they're relative.
33
34 I think the take-home picture, from what we're trying to do, is,
35 A, it's not that important for the overall discussion and decision
36 point here, what those absolutes are, in the sense of any
37 particular location, and, even if we moved around it a little bit,
38 within like Mississippi, it would still be that that area is going
39 to probably have a higher exploitation rate than say the western
40 Louisiana that is the big blue for almost everything, because it's
41 far offshore, and it's not -- It's probably the least population
42 density of humans.
43
44 That is why relative is a little safer. When we take average over
45 the entire one, then we can get a population-level one that's
46 probably more closely affiliated, or closely reflect, what we might
47 get from the population-wide stock assessment, but there's also an
48 averaging of a lot of areas that almost are completely unfished in

1   that, and so I wouldn't say that it is what our stock assessment
2   is saying, because our stock assessment, as we've kind of always
3   said, is really operating on the fished population and then those
4   fish that, through the doming of selectivity, we're saying are
5   also there, but maybe not as heavily fished, but I hope that
6   answers it.
7
8   **DR. POWERS:** Yes, that answers it, and just the map seems to
9   suggest that it was an absolute, but now I understand why it's
10 better characterized as a relative. All right.
11
12 **CHAIRMAN NANCE:** Thank you. John.
13
14 **MR. MARESKA:** Thank you, Mr. Chairman. I'm trying to answer John
15 Walter's question, and so, if you toggle back and forth between
16 Slides 12 and 13, you see where the red mass through Alabama kind
17 of shifts from the east to the west, and so the red is clearly
18 there under Mobile Bay and Baldwin County, and then, when you go
19 to exploitation, it is more -- The graphic is a lot smaller, and
20 so it's hard to see, but it appears that most of that exploitation
21 is shifted to the west.
22
23 I think, in an earlier slide, you indicated that a lot of the depth
24 information that you were getting was through the Snapper Check
25 app, and so that's self-reported by the anglers, and so that may
26 be a reason for the shift, and I don't know if it was all aggregated
27 into one county or how the effort to exploitation was calculated
28 and the graphic appears that it was that does, and so that's what
29 I was referring to with Paul's question, and I hope that answers
30 your question, John Walter.
31
32 **DR. WALTER:** Yes, and thanks, John. If I could just chime-in,
33 that's helpful. Paul, I think, or maybe it was Trevor, if there
34 is other data, it's not a done deal, and we are working on this,
35 but I think, for the purposes of the decision process here, it's
36 probably a good enough overall picture, and we can refine the
37 actual locations, but this is also one of the reasons that --
38 Remember that we didn't post-stratify the biomass distributions,
39 or post-stratify the Great Red Snapper Count, by depth, which might
40 be one of the reasons that the catch might come from a deeper
41 region, but the biomass is spread out, but, when the catch over
42 that spread-out biomass gets divided, it makes it have the
43 implication that there is much higher local exploitation.
44
45 Anyway, that's a nuance that I think we can sort out, and I would
46 be happy for Chris and I to try to get more information that we
47 can put in, and I hope this is informative of the overall spatial
48 footprint that might be fished by the fishery and the potential

1 for it to access areas outside of its normal footprint. Thanks.
2
3 **CHAIRMAN NANCE:** Thank you, John. Trevor.
4
5 **MR. MONCRIEF:** I appreciate all the conversation here, John, and
6 I appreciate all your hard work on it, and I will try to link up
7 with you and get that information to you, just so you can have it
8 on-hand.
9
10 I was going to ask, and, I mean, I don't want to put you on the
11 spot, but you had, in the presentation, that one of the objectives
12 was to see if -- Identify and support assumptions about the
13 fishable biomass of basically all structure, all structure plus 10
14 percent, or 15 percent, and you alluded to it when you first
15 started the presentation, but I was going to ask, and, given the
16 scenarios in front of us, does that -- Did you identify maybe some
17 findings from that objective? I mean, does it support all
18 structure plus 10 percent, or even all structure plus 15 percent?
19
20 **DR. WALTER:** Thanks, Trevor. I know you said you didn't want to
21 put me on the spot, but --
22
23 **MR. MONCRIEF:** I kind of did, yes.
24
25 **DR. WALTER:** You kind of did, and that's all right. It definitely
26 says that it's -- When you look at the exploitation rate, there is
27 exploitation to give in that analysis, and so that would suggest
28 that there is potentially more UCB that could be considered.
29
30 That would be balanced against the potential for -- That, as you
31 expand out to that, and the fishery doesn't change where it's
32 fishing, you're going to get higher and higher exploitation rates,
33 in reality, than what we're showing here, based on the spatial
34 patterns, but one could entertain a higher fraction of UCB, based
35 on what the footprint of the existing fishery is, based on this
36 analysis.
37
38 **MR. MONCRIEF:** Okay. Thank you for that. Sorry for putting you
39 on the spot, but I appreciate all your help with this.
40
41 **CHAIRMAN NANCE:** Thanks. John, were you able to find anything for
42 Will's question on size?
43
44 **DR. WALTER:** Let me see. Hold on.
45
46 **CHAIRMAN NANCE:** Okay.
47
48 **DR. WALTER:** Chair, I will have to get back to you with an easily-

225

1 digestible answer, and so if you would allow me a little more time.
2
3 **CHAIRMAN NANCE:** Absolutely. Harry.
4
5 **MR. BLANCHET:** Two points. First, to Paul Mickle's question
6 regarding what, as a state person, do I see, and the most obvious
7 thing, to me, is that it seems that there is some incompatibility,
8 perhaps, between the western Louisiana and the adjacent eastern
9 Texas exploitation rates, and it seems like they're a little bit
10 lower in western Louisiana than the comparative area just to the
11 right of them, or I guess to the left of them in the picture, and
12 to the right of them as you leave Sabine Pass, which is my
13 perspective. That is the kind of thing that might be able to get
14 worked out at the data workshop, and I just wanted to do that as
15 a passing note.
16
17 The other question I had is one of the things that we are talking
18 about is distance from port, and one of the things we really
19 haven't talked about -- We talked about how much of the UCB is
20 incorporated, and do we have some of that either natural or
21 artificial structure that essentially is not being exploited? I
22 am thinking, for instance, the Flower Gardens, or some of those
23 other far offshore banks, may not see the level of exploitation
24 that you would see in some of the more inshore waters. When we
25 talk about -- Is that captured here?
26
27 **DR. WALTER:** Harry, I think it is. If you look at the biomass
28 distributions you can see some red squares out on those shelf-edge
29 breaks, and you will see that there is almost no exploitation
30 whatsoever on those same squares, and so it is picking that up.
31 We don't have the actual Flower Gardens, but that is essentially
32 what is going on out in those, when you're 150 miles offshore, and
33 there is biomass, and there is fish, but there's not really anyone
34 fishing for them, because they don't need to fish that -- To go
35 that far, I think, presumably.
36
37 **MR. BLANCHET:** It's -- It goes back to, when we start talking about
38 it on this fine of a scale, because I think that we may be
39 oversimplifying it, when we say that we've got all structure is
40 available and exploited, and all natural bottom is available and
41 exploited, but the picture that I see is, yes, it's all available,
42 but not necessarily all exploited to the same degree. That's just
43 a whole different level of complexity that I am not used to
44 thinking about.
45
46 **CHAIRMAN NANCE:** Thanks, Harry. Jim Tolan, please.
47
48 **DR. TOLAN:** Thank you, Mr. Chairman. I am glad that Harry brought

1 that point up, about that really stark north/south dividing line
2 between -- Right at the Sabine River, and it's always struck me,
3 in all these maps, and it sort of shows up, and I don't know if
4 it's artifact or what, or whether it's the original Karnauskas et
5 al. method, the new Great Red Snapper Count numbers, the post-
6 stratification or not, and off of no other state do you see this
7 really stark dividing line, and it just struck me.
8
9 I always see this between Louisiana and Texas, right there at the
10 Sabine, and, like he said, the exploitation rate is very different,
11 but it's the same group of people going about the same distances,
12 and I have just always wondered about that, and I am just curious
13 if the analyst can address that very quickly, and not get into a
14 discussion about it, and I see Mandy is up there, but it always
15 struck me as that's a really stark dividing line. Thank you.
16
17 **CHAIRMAN NANCE:** Mandy.
18
19 **DR. KARNAUSKAS:** Thanks, Mr. Chair. I was going to answer that,
20 and so that line is going to be an artifact of smoothing the Great
21 Red Snapper Count numbers on the Karnauskas et al. by state,
22 because the original Karnauskas et al. doesn't have the sort of -
23 - It's got a smoother transition from Texas to Louisiana, but then,
24 when we have the new state abundance numbers, and we're scaling
25 those -- We're scaling the Karnauskas et al. numbers by state,
26 according to the within-state relative index from Karnauskas, and
27 that's what is causing that contrast.
28
29 I guess I just wanted to also touch on this, and some of the other
30 discussions, and sort of, as the author of this original
31 distribution map, just say that I think we're kind of -- I feel
32 we're reaching the limits of what the study was sort of intended
33 to do, and, obviously, it's outdated, and it was based on 2011
34 estimates, and I think what we're looking at here is generally
35 robust, but we're getting to the point where we're sort of jumping
36 through a substantial number of hoops and assumptions that we can
37 continue to improve on this, but it's going to be subject to these
38 different hoops that we have to jump through.
39
40 I just wanted to make sort of a general statement that, if we want
41 to go down this route of very fine spatial analysis, and optimizing
42 management at these very fine spatial scales, then we really need
43 the data behind it, and I don't know if the SSC feels that we
44 should make some sort of recommendation as to the ability to
45 collect data at these scales and do these fine spatial analyses,
46 because I am happy to admit and talk about the shortfalls of the
47 map and the distributions, but a lot of these issues just come
48 down to lack of data, and we don't have anything better, and so

1 we're forced to make these assumptions. Thanks.
2
3 **CHAIRMAN NANCE:** Mandy, thanks for that input. Harry.
4
5 **MR. BLANCHET:** This I think is kind of a follow-up to that. A lot
6 of these analyses were done last night, based upon decisions that
7 we made yesterday, but one of these founding principles that we
8 have at the bottom is an analysis that was based on ten-year-old
9 data, and I don't know -- I mean, I remember the paper, but I don't
10 know the level of effort that went into doing that and what would
11 it take to update that to more current information, and it seems
12 like -- This is something that has been bugging me, in the back of
13 my brain, for a while, and Mandy has brought it up a couple of
14 times, but I don't know that -- I don't know -- Well, she would
15 have the best understanding of how much benefit would it be to
16 basically redo, or refine, that analysis, either for SEDAR 74 or
17 at some time later than that, but it seems like something that is
18 worth keeping track of and not as a one-off research project.
19
20 **CHAIRMAN NANCE:** Well, I know that it won't happen tonight, but
21 it's -- This is the data we have, for sure, and I think what Mandy
22 is referring to is the need to be able to collect this data more
23 often than every ten years and those types of things.
24
25 **DR. KARNAUSKAS:** If I may, Mr. Chair, that was exactly my point.
26 I mean, certainly, the Karnauskas et al. could be updated, and we
27 could make an attempt to redo that analysis, and I don't know based
28 on what data, and certainly there are probably some assumptions
29 that could be updated, but, really, I was speaking to just the
30 need, and you can see the level of information that we can get
31 from the commercial VMS, those fine spatial scales, but, for the
32 recreational, we really have to make bigger assumptions, and so I
33 just wanted to hone-in on that point, that we really do need the
34 data, all the types of data, at that fine spatial scale, to be
35 able to make advances on this.
36
37 **CHAIRMAN NANCE:** Thank you. Any other questions on this
38 presentation by Dr. Walter? Let's go ahead and bring up the other,
39 the presentation by Matt, and move forward with coming to
40 conclusions on what we want to do with these values. I am looking
41 for motions, recommendations, discussion. Let's go ahead and bring
42 up -- I'm not sure what number it is.
43
44 Anyway, let's go ahead and bring up I think it's Slide Number 16
45 here. That gives us at least a starting point, and I am looking
46 for recommendations on whether we want to have OFL and ABC from
47 any of these, or do we want to have new runs? If we're going to
48 have a new look at some of the structure plus 30 percent, those

1 types of things, we need to, obviously, suggest those now, so that
2 Matt would have a chance to run those overnight. John.
3
4 **MR. MARESKA:** I was just curious if Matt was able to update the
5 three-year averages for the 75 percent F SPR 26 percent, and that
6 was the error that Doug had pointed out.
7
8 **CHAIRMAN NANCE:** Thank you, John.
9
10 **MR. SMITH:** I was so enthralled with the last conversation that I
11 forgot to do it, but I'm going to do it right now, with a quick
12 spreadsheet exercise, and I will get that updated immediately.
13
14 **CHAIRMAN NANCE:** Luiz, please.
15
16 **DR. BARBIERI:** Thank you, Mr. Chairman. While we wait for Matt to
17 come back with that updated figure there, and, Matt, I appreciate
18 what you and LaTreese and the Science Center has done here, but I
19 am finding it difficult, really, to wrap my head around this
20 analysis in a way that it really follows the main principles of
21 what the SSC is instructed to use to provide management advice to
22 the council, to evaluate the science, and there are criteria that
23 we're supposed to follow, including some of the parameters that
24 define NS 2 and NS 1, and one of the issues here is we don't have
25 re-estimated reference points.
26
27 I am looking at those numbers there on the screen, those
28 projections, and I don't know where they fall within the broad
29 picture of where MSY, or its proxy, would be, and so I don't know
30 what fraction of removals are actually sustainable.
31
32 We integrated a lot of new data, great data, and that I think has
33 expanded the amount of information that's going into this analysis,
34 and we know more now about Gulf red snapper, but I feel that the
35 council is expecting us to provide some level of catch that is
36 considered sustainable, and so, without knowing where MSY is, and
37 usually we base our evaluation of OFL on an idea of MSY, or its
38 proxy, and so we know what the level of removals, in terms of
39 biomass, and what the exploitation rates would be at a sustainable
40 level, and I don't find that here in this analysis.
41
42 I understand that it's difficult to produce this outside of an
43 assessment framework, but this is what I am struggling with, right,
44 is to say, looking at all of that new information, that it can be
45 actually distilled into management advice in a way that follows
46 the principles that we are supposed to follow.
47
48 **CHAIRMAN NANCE:** Thank you, and, you know, as we've seen in the

past, usually, from an interim analysis, we're basing those analyses on an assessment, and we're just updating the values within that assessment, using an indices of relative abundance and things, and we don't have -- We have SEDAR 52, and we've taken some of the values from it to update this, and this really is an attempt to update that and give us some structure, to be able to have an OFL and ABC, using that new abundance data, but it certainly doesn't give us the MSY values that we have and reference points. Steven Saul, please.

DR. SAUL: Thank you, Mr. Chair, and thank you, John, Mandy, and others from the Science Center, and I certainly appreciate all of the extremely hard work that you have all done with this, as well as the hard work that the folks doing the red snapper count and the LGL folks have put into all of these, considering getting this as right as we can, and I really appreciate all of that hard work.

Having said that, and taking all this new information in, I echo Luiz's concerns, and I know -- I know we've talked about this in other SSC meetings, and I know we have the upcoming SEDAR benchmark in a couple of years, where the Great Red Snapper Count data, and the LGL data, presumably, will be kind of reevaluated, vis-à-vis the SEDAR process, and integrated in some way, hopefully, into the modeling, which is great.

However, in the meantime, I am really concerned, as Luiz brought up, that we are borrowing values from one -- That we're borrowing values from something that is apples and combining it with something that is oranges and saying, okay, here is our catch advice, when we know what the -- If we say, okay, yes, the Great Red Snapper numbers are correct, for example, and let's say assume that that number is perfectly accurate, and, okay, so we know what the population is, but we don't know where that population is relative to virgin, where it relative to the benchmarks, et cetera.

I too am having a really hard time coming up with, or a very hard time being comfortable, developing catch advice, where we're sort of shooting in the dark, right, and we're sort of throwing at a target, at a bulls-eye, in the dark. Thank you.

CHAIRMAN NANCE: Thank you, Steven. Jim.

DR. TOLAN: Thank you, Mr. Chairman. I am going to take kind of a step back, as it relates to the current tables that's in front of us and some of the ABC and OFL numbers that we're, I guess, expected to come up with, and I'm not going to be nearly as eloquent as Dr. Barbieri was, but the big question that I have, given the Great Red Snapper Count and the UCB area and the numbers and all

that biomass that we are saying is out there, and looking at all
these exploitation maps in this last presentation, and thank you
for that, and that was a great presentation, but it seems like
there is a lot more than 15 percent that's being utilized.

All structure plus 15 percent, my general question is where does
that 15 percent cap come from? I am still not real sure why that
was chosen as the cap for the UCB, and so that's really the question
that I have. Thank you.

CHAIRMAN NANCE: Ryan, do you have a --

MR. RINDONE: I don't think there's a cap on the percentage of the
UCB that can be assessed, and I think, truth be told, there's not
a part of the Gulf of Mexico that commercial and recreational
fishermen can't get to. It's more about whether or not that area
is subject to fishing pressure by a directed fleet, and so, as
John had said, John Walter had said, there is large areas of the
Gulf that, while subject to some very miniscule amount of fishing
pressure, it is very miniscule, and it's not an area of the Gulf
that one could say is targeted with any kind of regularity. In
passing might be a better way of describing that, and I will let
John elaborate on any of that.

DR. TOLAN: To that point, Mr. Chairman?

CHAIRMAN NANCE: Yes, please, Jim.

DR. TOLAN: I guess, looking back at the maps we've just been
presented with, and as the whole of the Gulf, I am just -- The 15
percent number just seems to be kind of low, and so I was just
curious where that limit -- Again, there is no, like Ryan said,
there's no cap, but where that number came from, as we're going to
use the UCB at 15 percent to set OFL and ABC, and so that's really
the heart of my question, is where did that 15 percent come from.

CHAIRMAN NANCE: Okay, and Ryan has a -- He misunderstood what you
were asking, Jim.

MR. RINDONE: Jim, I thought you said 50 percent, and I was trying
to figure out where 50 percent came, but 15 percent.

DR. TOLAN: Yes, 15.

MR. RINDONE: So, originally, we were looking at, based on a much
previous Gardner analysis, we were looking at 13 percent, and so
all structure plus 13 percent, and, at a previous SSC meeting, or
at the previous SSC meeting in January, you guys requested these

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1 three analyses, to kind of bracket that previous estimate of 13
2 percent with 10 percent and 15 percent.
3
4 Now, the SSC, like Matt had talked about, you guys can request all
5 structure plus more UCB, if you think it's appropriate to do so,
6 and he can drum that up for you guys, but the three scenarios that
7 are presented to you here were to be considerate only of the
8 natural and artificial structure habitat in the Gulf, that same
9 habitat plus 10 percent of the UCB, and that same habitat plus 15
10 percent of the UCB, again under the acknowledgement that the
11 entirety of the UCB is not equally subject to directed fishing
12 pressure, but that it's also likely greater than zero, and so it's
13 up to the SSC to think about that critically, as far as what they
14 would want to include when recommending any catch advice.
15
16 **CHAIRMAN NANCE:** In the last meeting, Jim, as you know, we came up
17 with all structure, all structure plus 10 percent, and all
18 structure plus 15 percent, and that was to mimic what we had seen
19 at the January meeting, but what I'm saying also is, if we want to
20 see an additional cut, then we could ask for that.
21
22 **DR. TOLAN:** Thank you, both, Mr. Chairman and Ryan. I am going to
23 go back and review that, the last meeting, and I vaguely remember
24 that 13 percent and the 10 and 15 brackets, and I will review that,
25 but thank you for the clarification.
26
27 **CHAIRMAN NANCE:** You're very welcome. Just for those, Doug, your
28 question, this is the updated values, the three-year average and
29 the five-year average, and those are the updated values. We're
30 sending that right now by email, but what's on the screen is the
31 updated value. Jason.
32
33 **MR. ADRIANCE:** Thank you, Mr. Chair. While Ryan was at bat, I was
34 wondering if he could help me remember -- We have the research
35 track, and the schedule for that, and then we go into, if I recall
36 correctly, an operational for --
37
38 **MR. RINDONE:** We lost you, Jason.
39
40 **MR. ADRIANCE:** There we go. I keep getting muted by the organizer.
41 Maybe you're telling me to shut up.
42
43 **CHAIRMAN NANCE:** Well, maybe Jessica is, but --
44
45 **MR. ADRIANCE:** I wanted to find out, and when do we expect that -
46 - What is the timeline on seeing that management advice out of the
47 new assessment? Thanks.
48

MR. RINDONE: It depends on how fast Matt types. No, I'm just kidding. Right now, we're thinking that the research track is going to wrap up, with its review workshop, sometime in 2023, and the nature of the research track process is for it to be a little bit more open-ended, but we've talked about, generally, or at least at the council level, with the Science Center, we've talked about that research track process concluding in 2023, and then, immediately following that, the operational assessment will begin, and so I think it is not unreasonable, and I am willing to be told that I'm wrong here, but I think it's not unreasonable to expect that the SSC would have the opportunity to review the results of an operational assessment, based on that research track, sometime by early 2024, late 2023 or early 2024, somewhere in that time horizon.

That would mean that any catch advice that's recommended herein would likely only be applicable to the 2023 and 2024 fishing years, presuming that the SSC would take the ultimate management advice generated from SEDAR 74 and recommend revised catch advice based upon that, and so lots of "ifs" sprinkled around in there, but that's my general thought.

CHAIRMAN NANCE: Thank you, Ryan. Jason, did that answer your question?

MR. ADRIANCE: Yes, and Jessica keeps cutting me off.

CHAIRMAN NANCE: It's not here, for sure. Something is happening, but it's not intentional, and I will put it that way, but thank you, Jason.

MR. ADRIANCE: I never took it as such. Thank you.

CHAIRMAN NANCE: I know. Doug.

MR. GREGORY: Thank you, Chair. Could we look at Slide 20, the ensemble runs?

CHAIRMAN NANCE: Yes, we can.

MR. GREGORY: I have been very, very nervous about this whole process, and I can list probably fifty different things that make me nervous, but I also would like to be pragmatic, and this ensemble advice attracts me, in that it is a combined like joint distribution, almost, and, if we were to take the mean as the OFL, and, given the uncertainties that we've been dealing with, talking about, use the probability of 0.3 for the ABC, and do a five-year average, because we know the research track is not going to be

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1 done on time, and the operational won't be done on time, because
2 this is a very difficult and complex, but, if we took the five-
3 year average, 16.31 million pounds, for the ABC, that's only about
4 a million pounds, or 900,000 pounds, more than what we recommended
5 last year.
6
7 My gut feeling is that would not be dangerous, but it's a
8 substantial increase, and so that's where I am coming from right
9 now, and anything larger than this would send me off on my soapbox
10 again, but I would like people to consider this, to get us off the
11 dime, because I know I'm cutting to the chase, and I am not dealing
12 with the details, and I am just looking at the end result. Thank
13 you.
14
15 **CHAIRMAN NANCE:** Thank you, Doug, and I appreciate that comment,
16 and it's one of those things where we do have -- In January, we
17 came up with, or maybe it was March, and I can't remember, but we
18 have come up with an OFL recommendation, and then we came up with
19 an ABC using an entirely different format, and I wasn't -- While
20 we did that, I'm a lot more comfortable that, if we can come up
21 with an OFL out of this, and we feel comfortable about that, we
22 need to come up with an ABC also out of the same data, and so your
23 recommendation is wise, I think.
24
25 I have been looking at this ensemble advice across the UCB levels,
26 and I think it certainly allows us to take in all the risk we're
27 feeling, and each of us have -- Each of us have things, when we're
28 looking at this data and so forth, that we feel we're taking a
29 risk doing this, but I feel like using this level, this table right
30 here, moves us to a place where we want to be.
31
32 If we utilize this, we certainly need to monitor the fishery and
33 make sure that we're not seeing drastic changes, but I think using
34 this table would allow us to move forward, and so thank you for
35 that input. John.
36
37 **DR. WALTER:** Thank you, Chair. Two things. Quickly, we used an
38 average weight of 3.2 pounds in the east and 4.8 in the west, and
39 I will follow-up with Will on whether that jibes with what the
40 average size might be.
41
42 Then the second point was I have been looking and trying to dig
43 into Trevor's question, putting me on the spot on the 15 percent,
44 and to get back to the other comment from Jim about where that
45 came from, and I think that the analysis that we did might inform
46 it a little bit, in terms of if you take where 1 percent -- The
47 biomass that's subject to 1 percent or greater exploitation, it
48 looks like it's between 45 and 50 percent of the total biomass.

1
2 That's basically what -- We're saying that that's what is possible
3 or currently exploited, and the 1 percent exploitation -- Below
4 that, you're getting less than 500 pounds for a five-nautical-
5 mile-by-five-nautical-mile grid square, and so, if we looked at -
6 - It's almost no fishing pressure.
7
8 If one were to do that and take half the biomass as available, and
9 the Gardner analysis is working on total biomass and not UCB, and
10 then, if you take Table 3 in Matt's presentation on Slide -- I
11 think it's on Slide 7, and you've got three scenarios of all
12 structure, all structure plus 10, all structure plus 15.
13
14 The all structure plus 15 would be about, I think, the forty-seven
15 million, and about 45 or 46, or maybe 50, percent, of the total
16 biomass, if you did the math and divide them, which might say that,
17 if you kind of merged the ideas in the two presentations together
18 and said how much of the UCB might it be, and convert it to how
19 much of total numbers, and granted this is numbers and not biomass,
20 you might say 50 percent of the total numbers might be what is
21 fished under the current footprint of fishing, potentially
22 bookending 50 percent, and maybe -- I think that math seems to
23 generally check out, though I haven't done it formally. Thanks.
24
25 **CHAIRMAN NANCE:** John, thank you very much. Harry.
26
27 **MR. BLANCHET:** I will pass.
28
29 **CHAIRMAN NANCE:** Okay. Roy.
30
31 **DR. CRABTREE:** Well, I guess -- To me, I want to compliment the
32 Center for all they have put into pulling this together, because
33 I think it's a tremendous amount of work, and I hear Luiz's
34 concerns, and I have some similar concerns about that, but, to me,
35 the count that was done I think is pretty compelling that the
36 population is larger than we thought it was, and it's larger than
37 what is indicated in the last stock assessment.
38
39 Given that SEDAR 52 indicated that we were not overfishing, and we
40 were on the road to recovery, if the population is larger than we
41 thought it was, the exploitation rates are probably lower than we
42 thought they were, and so I don't really share the concerns about
43 sustainability of it, and it seems, to me, the evidence is pretty
44 good that not only is this sustainable, but the stock, Gulf-wide,
45 is likely to grow.
46
47 Now, I think the council needs to be concerned about the idea of
48 localized depletion in some areas, because I think the tagging

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work in the Great Red Snapper Count indicates that there are very high return levels, and so really high exploitation rates in some places, and so I think it's quite likely that you're going to see localized declines in areas where fishing pressure is heavy, and I think we're hearing some of those concerns from the fishermen that we have heard from.

You know, I've been involved with red snapper for -- It scares me to think, but twenty-five years or more, and I have seen the estimates of MSY all over the place, and I have seen estimates that were much higher, and estimates that were quite a bit lower, and a lot of that has been a function of some assumptions about steepness and things, and so we've never had a very good estimate of what MSY in the fishery was, and that's where the 26 percent SPR proxy came around, and my recollection is that that proxy we came up with in the mid to late 1990s, I think, and it's just unknown ever since then, but I believe we've always understood that, ultimately, that wasn't likely to be the final resting place, and MSY is likely to be something different, we think.

Based on what we're seeing here, whether the stock is less productive or not, I think, in the end, MSY is going to be a larger number than we thought it was, because there are more fish out there, and there are more snapper in places we weren't -- We thought they were there, but we had no clue as to how many.

At any rate, I think, given what the council is looking for, and all things equal, we probably have enough information here that we could give them new catch advice. I think I'm in a similar place as to what Doug Gregory, and, Jim, you commented on it, that it seems to me that the ensemble advice that we have is pretty reasonable, and it allows for some increase in the quotas, and it allows us to get some consistency in where we are with the OFL and the ABC, and I think we'll have to figure out if it's 30 percent P*, and that probably does capture, or do a better job of capturing, the uncertainties that we have, versus 40 percent, but I agree with Doug that it does seem, to me, a modest increase in catch levels is warranted.

My hope is, when we get the new benchmark, that it will be on time, and these catch levels that we're talking about now are only going to be there for a couple of years, and I look forward to a new assessment that enables the catches to go up more and give us a lot better idea of where is the ultimate resting place that we're coming to, but I think, at this point, I'm in a similar place as to what Doug was talking about, and Jim referred to, and it seems that's a reasonable place for us to end up.

1 **CHAIRMAN NANCE:** Thank you, Roy. Doug.

2

3 **MR. GREGORY:** Sorry. I just forgot to lower my hand.

4

5 **CHAIRMAN NANCE:** Okay. Thank you, Doug. Sean.

6

7 **DR. POWERS:** I think Roy made some really good observations, and
8 I think our impression of this stock has definitely changed,
9 because of the Great Red Snapper Count and a lot of these counts.
10 I, personally, would feel comfortable with a little higher catch
11 levels, and I know we're just talking about generalities and not
12 specifics, than the ensemble advice, because the ensemble advice,
13 as they said, is really just a modeling averaging, and so that's
14 really talking about 8 percent UCB.

15

16 The Gardner and the analysis that John just presented suggested a
17 much, much higher number for UCB, and I am not saying I would go
18 up that high, but I think ensemble is still a little on the
19 conservative side, too conservative, for the next two years.

20

21 The stock -- We know there is a lot more biomass out there that is
22 probably unexploited, that serves as a potential reservoir for
23 recruitment, if we guess wrong, or base it on too optimistic of
24 advice.

25

26 My caution with doing that is I don't have any reservations about
27 the west and increasing catch levels in the west. The east
28 concerns me, and that difference that John talked about, and I
29 will let Will talk more, whether he thinks that's in line, but I
30 think that's relatively -- That is still too small of a difference
31 between the west and the east, and so I am concerned about the
32 east, and, as Roy said -- I wouldn't use the words "localized
33 depletions", but we are definitely seeing the average size of red
34 snapper decrease in heavily-exploited areas, and that is, again,
35 another balance that would restrict me from going too far and using
36 too high of a number of UCB, but I am still left at the thought
37 that the ensemble model is simply just 8 percent UCB, and it's not
38 an ensemble model, and so that's kind of my thoughts there.

39

40 **CHAIRMAN NANCE:** Thank you, Sean. Jason.

41

42 **MR. ADRIANCE:** Thank you, Mr. Chair. Sean covered a lot of what
43 I wanted to say regarding the ensemble, and I feel the same way
44 about that, and, given what we saw about the UCB, I too feel we
45 can use a little more UCB, and I wanted to reiterate what Harry
46 discussed about the P* and traditionally how we had arrived at
47 that, and I won't belabor those points. Thank you.

48

1   **CHAIRMAN NANCE:** Thank you, Jason. Will.
2
3   **DR. PATTERSON:** Thanks, Mr. Chair. To John Walter's comment about
4   the sizes, what we had for Florida, as a mean size, was 420
5   millimeters total length. However, that was -- There was a long
6   tail to that distribution, and so most of the fish were actually
7   that size or smaller, with a mode of around 350, but the size of
8   fish at 420 is 0.984. The mean biomass would be 0.984 kilograms,
9   or 2.16 pounds, and so about 50 percent smaller than what was used
10 in the calculation to estimate exploitation rate based on biomass.
11
12 Again, the size of the fish, overall, was smaller than that, and,
13 secondly, when we look just at the Big Bend data, which I've been
14 doing over the past twenty minutes or so, the mean size is around
15 400 millimeters, which, on a per-fish -- On a biomass basis, is
16 1.86 pounds, and so even a smaller amount, and it's not terribly
17 important, but, you know, I think that explains a bit of the large
18 peak that we see in the figure from the analysis that John
19 presented.
20
21 The second comment I have is about the ensemble approach, and I
22 don't understand -- I mean, it seems to me that the strongest
23 rationale for utilizing an ensemble approach here would be that,
24 or model averaging, would be that you increase the distribution of
25 your estimates so that the standard deviation goes up, and then,
26 using a P* approach, that might provide a greater -- It would
27 provide a greater buffer, but there's nothing written that says a
28 P* approach has to be utilized here by the SSC.
29
30 I mean, in past red snapper assessments even, and go back to 2009,
31 when the ABC was set at 75 percent of the OFL, and, given some
32 uncertainties, some members thought that some of the assumptions
33 that were made during that assessment process produced a more
34 optimistic rebuilding trajectory since the previous assessment at
35 that time, and so that was utilized, and so, as far as UCB and
36 what is the best approach there, that can be a different
37 discussion, but, as far as that distribution, if you're utilizing
38 it just to increase the distribution, that's not necessarily
39 required.
40
41 **CHAIRMAN NANCE:** Thank you, Will. Mandy.
42
43 **DR. KARNAUSKAS:** Thank you. I wanted to go back to something that
44 Doug said earlier that made me think, and it was something along
45 the lines of, if we increase the catch the 900,000 pounds, or
46 whatever it was, it's not going to be that dangerous, and I guess
47 I would counter that slightly and say that dangerous for who,
48 because I think what we've seen today, in all the presentations

1 throughout the day, is that there's a lot of heterogeneity in how
2 the fleets respond and where the exploitation is and where there
3 is the potential for localized depletion.
4
5 I'm kind of on the fence, in terms of increasing catch or
6 decreasing catch, and I think, if the SSC wants to take the risk
7 of increasing the catch, then we should also be really clear about
8 the caveats and the risks that might occur with that associated
9 increase, and, again, I think the presentations and the information
10 we've seen today put us in a good place to make some assumptions
11 about where are those risks that we might want to be monitoring,
12 if we do increase the catch.
13
14 I also wanted to touch on the concept of MSY and what Roy brought
15 up, and some others earlier, in terms of how we define that, and,
16 from my perspective, I am less concerned about what it is
17 numerically and more concerned about what it is conceptually, and
18 how do these catch rates that we're proposing convert to things
19 like opportunity and access and not just yield, and I really think
20 there is no right answer.
21
22 You know, you could increase the quota, and that's going to be
23 very optimal for some, probably the section of the fleet that has
24 high mobility, and it's going to be less optimal for parts of the
25 fleet that don't have that mobility, and so just some thoughts on
26 MSY and also trying to go in that direction, in terms of measuring
27 how these catch rates really translate to things that matter to
28 the folks on the water.
29
30 **CHAIRMAN NANCE:** Thank you, Mandy. John.
31
32 **DR. WALTER:** Thanks. I have two comments. One is on -- I think,
33 Sean, you said that I said that the percent UCB could be increased
34 substantially, and I don't want that taken out of context. I think
35 the analysis shows that the 15 percent is a reasonable upper one,
36 but it is substantial from the 8 percent to 15, and, yes, that's
37 almost a doubling, but not up to 50, and there's no way that 50
38 percent of the UCB would -- I don't want that to be interpreted as
39 50 percent of UCB, and that would be not supported by our analysis,
40 and I just wanted to clarify that.
41
42 Then the point from Will about the size, and this one is
43 intriguing, because, if we got the size wrong by half, presumably
44 the biomass estimate would be half, and the exploitation rate would
45 then be double, and so I'm trying to mull over what the
46 implications of that are, and I'm just thinking, in general, that
47 the Big Bend probably isn't where the fishing is going to occur
48 anyway, and so I don't actually know where to go with that, and

1 it's just an observation about what our assumption about the
2 biomass might do. Thanks.
3
4 **CHAIRMAN NANCE:** Thank you, John. Luiz.
5
6 **DR. BARBIERI:** Thank you, Mr. Chairman, and I just want to bring
7 up the issue that, I guess to Sean's initial point, and there were
8 some other comments about keeping an eye on this stock, right, as
9 we move forward, and, I mean, I think this will be important,
10 because, to some extent, we are -- If we decide to move forward
11 with a recommendation to increase the ABC based on the Great Red
12 Snapper Count, without reference points, we need to understand
13 that we are actually shooting in the dark, and we don't know, and
14 we don't have guardrails to tell us where the road is and where we
15 are driving off the road.
16
17 It will be important, if that is the decision that we decide to
18 do, the committee, to request that the Center can come back and
19 provide us an update on the bottom longline, and I think that's
20 the index that we've been using to kind of monitor the status of
21 the stock as a long-term survey, and that's done throughout the
22 Gulf, right, and can give us an idea.
23
24 I would like, by the end of this year, to see the results, an
25 update on the latest data available for the bottom longline, and,
26 if possible, have that broken down between the eastern and western
27 Gulf, because I think the impacts of this will be disproportionate,
28 given where the center of abundance and the biomass of the stock
29 is, versus where the vast majority of fishing effort is, right,
30 and so I think SEDAR 52 estimated, and Matt, correct me if I'm
31 wrong, but I think the SEDAR 52 estimated that the highest fishing
32 mortality, component of the fishing mortality, for Gulf red
33 snapper, I mean for the recreational sector, comes during the
34 closed season in the eastern Gulf, from discards, but fishing
35 effort is really, really large on this side of the Gulf, and the
36 biomass is really more concentrated on the other side, and so the
37 impacts of this --
38
39 In weight, biomass, and so I think it will be important, and I
40 would like to make a request here, as officially as I can, that we
41 actually see this bottom longline survey summary information at
42 the end of this year, and then in subsequent years, until we can
43 have a stock assessment, because, otherwise, we don't have anything
44 else to guide, right, on where we are on the impacts of this higher
45 fishing mortality, potentially, that might be the result of this
46 increased ABC.
47
48 **CHAIRMAN NANCE:** Ryan, please.

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1
2  MR. RINDONE:   Thanks, Mr. Chair.   I believe the NMFS bottom
3  longline survey data are available around November, which would be
4  after our last SSC meeting of the year, which would -- The next
5  time to see that would be early January, and so does that still
6  jibe with what you want?
7
8  DR. BARBIERI:  Yes.  I mean, the same way that we look at that for
9  red grouper, annually, because we have concerns about the status
10 of the stock and the impacts of the red tide events, and us wanting
11 to know how that stock is doing, and I think we would have to,
12 ideally, do the same thing here.
13
14 CHAIRMAN NANCE:  Okay.  Will.
15
16 DR. PATTERSON:  Thanks, Mr. Chair.  Luiz makes a really good point
17 here about, whatever the SSC votes to do, and the council then,
18 from there, as far as the ACL and ACTs for the various sectors,
19 it's going to be really important to have some update information,
20 given the time before the assessment is completed, the operational
21 assessment is completed.
22
23 I don't understand, and maybe Luiz can explain it in a little more
24 detail, the idea of being presented about reference points, because
25 in red snapper, we have a proxy of 26 percent SPR as the BMSY
26 reference point, and F 26 percent SPR, and so we're not actually
27 estimating it in the model, and so I don't fully follow those
28 concerns, and, in this process, if in fact there is this greater
29 biomass out there that's been estimated in a study which I
30 participated, and then Benny's work off of Louisiana shows a
31 similar finding there, although on a different scale than what we
32 reported through our imputation process, and this matches what
33 fishermen have said for quite some time in different venues.
34
35 It's not coming completely out of left field, but, if there is
36 this biomass, and therefore egg production, out there, in areas
37 that are relatively invulnerable to fishing, then perhaps that can
38 explain some of the issue that we have trying to fit a spawner-
39 recruit curve in the red snapper stock assessment.
40
41 Now, I believe that part of that issue is that most of the time
42 series of recruitment information comes from the Florida line over
43 to Texas, and only in the past decade or so do we have trawl data
44 in the eastern Gulf, and there is more untrawlable bottom there,
45 as a proportion of the bottom, than in the west, but you also have
46 -- If there is this egg production that was unaccounted for, that
47 could explain some of the issues with trying to fit spawner-recruit
48 or the fact that the stock appeared to be as resilient, and, as
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1 Roy pointed out on day one, if you have an SPR estimate that is
2 down around 2 percent, going all the way back to Goodyear 1995,
3 how did that not totally collapse the stock? How did we not have
4 depensation at those levels?
5
6 A lot of these things, when you start to put it together, it adds
7 up, but, anyway, part of the questioning that I had here was really
8 for Luiz, and maybe he could explain a little bit more about his
9 concern about the reference point issue, because I don't quite
10 follow all of the rationale there.
11
12 **CHAIRMAN NANCE:** Thank you, Will. To that point, Luiz?
13
14 **DR. BARBIERI:** Yes, real briefly. Thank you, Mr. Chairman. Will,
15 what I'm talking about is, when you look at that table right there,
16 and you see 18.88 for 2022, right, that would serve as an OFL,
17 right, for the stock, and so where does that place relative to
18 what the MSY value, or the yield at that 26 percent SPR would be,
19 when you have an estimate of the actual MSY or its proxy, using
20 the integrated stock assessment model.
21
22 **DR. PATTERSON:** My understanding was that this was scaling the --
23 Given all of the information that Matt gave us about how it was
24 done, this was scaling the results from the previous assessment
25 relative to the new population size estimates and subsequent
26 analyses that came from the Great Red Snapper Count, and that
27 number there, right, the yield, the mean, in 2022, is the composite
28 of the models here at F 26 percent SPR, and so that would be the
29 yield at the overfishing limit, at the proxy for FMSY.
30
31 **CHAIRMAN NANCE:** Jessica, can you bring up page 16? I think this
32 is the one we need, and this is the deterministic projections.
33 The other ones are not, and so -- Go ahead, Roy.
34
35 **DR. CRABTREE:** Remember, Luiz, though that the 26 percent SPR
36 didn't come out of the last assessment, or the one before that.
37 That's been there since before I wore glasses or had gray hair,
38 and so a long time, and so we've always had this uncertainty about
39 the reference point, and we've used a proxy, and, in the vast
40 majority of the stocks we manage, we use a proxy, and we have very
41 few really reliable estimates of MSY.
42
43 **CHAIRMAN NANCE:** Luiz, to that?
44
45 **DR. BARBIERI:** Right, and I can live with that, and I just think
46 that we have -- There is a reason why the National Standard
47 Guidelines were set up in a way to provide guidance on how we
48 provide management advice based on reference points, and I think

1 that, when we follow those guidelines, we realize that this
2 analysis doesn't provide us with all the information that we would
3 have to have, and, I mean, not that I can't live with it, but I'm
4 saying that we don't have the same level of information here, in
5 terms of what represents sustainable catch levels, as we would
6 have if we were processing this data through a stock assessment,
7 and that was my point.
8
9 **CHAIRMAN NANCE:** Thank you. Will, does that address your question?
10
11 **DR. PATTERSON:** Yes. Thanks.
12
13 **CHAIRMAN NANCE:** You're very welcome. Benny.
14
15 **DR. GALLAWAY:** I just wanted to add my support to Luiz's suggestion
16 that we should put particular emphasis on getting the bottom
17 longline data. While indeed we do have this large biomass of fish
18 over uncharacterized bottom, I think the trend in that population
19 may well be indexed by the longline data, and the trend to-date
20 has not been good, and it's been declining, the last I saw, and,
21 in addition, the reports from fishermen on the water have some
22 kind of disturbing elements in what they're seeing as well, and so
23 I think we should be very careful and make sure that we've examined
24 all the evidence before we make any large changes in catch effort,
25 catch rates, and I'm sorry, and so I support making sure that we
26 get the bottom longline data as soon as possible, and, in fact, it
27 would be nice if it could be given analysis priority and provided
28 sooner than --
29
30 **CHAIRMAN NANCE:** Thank you, Benny. Trevor.
31
32 **MR. MONCRIEF:** Thank you, and I will just echo what Luiz and Benny
33 said, and I agree with the comments about the proportion UCB and
34 everything, but I was going to mention in here that, as we do move
35 forward and make the decision today, not only are we going to look
36 at the fishery-independent side, with the bottom longline, but we
37 also have the state survey information that's being produced in a
38 fairly timely manner that I think, at least on the state side,
39 state-by-state, can be monitored to be able to see how this -- How
40 the fishery is reacting and then what's going on with those
41 relative metrics across, and so I think there's a couple of places
42 that we can look to make sure we're on the right track.
43
44 **CHAIRMAN NANCE:** Okay. Thank you, Trevor. John.
45
46 **DR. WALTER:** Thank you, Chair, and I think the request from Luiz
47 was to show the bottom longline indices, and we have them, and I
48 know that Adam Pollack is willing and able to show them, and I

1   think he can send a presentation to the council staff, and, when
2   it gets there, if you wish and desire to see them, we can show
3   them.
4
5   My other point is there is some concern that this is outside of
6   the framework of how we've normally given advice relative to SPR
7   26 percent, but it's actually pretty consistent. The one thing
8   that is different here is that we're using different levels of
9   absolute biomass in those three projections, but the benchmark
10 scales so the fishing mortality rate that would be applied to each
11 of those presumed biomass levels would be consistent and well
12 within the F 26 percent, or 75 percent of it, and so we would be
13 fishing at the level that that population can handle, and that is
14 keeping it consistent.
15
16 The one thing we don't know is what the absolute size of the stock
17 is, because that is challenging to get, but we do have information
18 that suggests that it is larger than what we had originally been
19 estimating, and that's not surprising, given that there's a lot of
20 area that doesn't get fishing effort, and so the model wouldn't
21 know about that.
22
23 I think there's a lot more consistencies with how we've given
24 advice than -- While it doesn't actually go through the stock
25 assessment, a lot of the same framework is there, and benchmarks
26 are there, particularly on the fishing mortality side, which is
27 what we really control anyway. Thanks.
28
29 **CHAIRMAN NANCE:** Thank you, John. Doug.
30
31 **MR. GREGORY:** If you bear with me a bit, but I started working
32 with the council in 1984. In 1984, the fishery management plan
33 for the reef fish complex went into effect, and I contend that the
34 stock was collapsed. When the council was developing that first
35 FMP, I think the only measure that they put in place for red
36 snapper was a twelve-inch size limit, and they got so much of a
37 backlash from the public that the original regulation says that,
38 while there is a twelve-inch size limit, you can have five fish
39 under that size limit.
40
41 That was the original measure, and, in 1990, the council -- In the
42 1980s, the first stock assessment was 1986, and I would say we've
43 had probably ten stock assessments since then, including that one,
44 and so, in 1990, when the first amendment was done, we looked at
45 things, and we put quotas in place, and we put a seven-fish bag
46 limit on the recreational fishery, and, again, we got an uproar
47 from that, because of particularly the charter boats, because a
48 lot of their customers liked to come to the coast and fill up their

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coolers with fish and go back home.

I think those days are over, for the most part, but, after the seven-fish bag limit, it seemed that fishing got a little better, and, back in that day, the council didn't have to do what the SSC said it should do for the quotas, and the council would exceed the quota, to some extent, and other fisheries might have been more exaggerated than red snapper, but the point is, as different regulations were tried, different restrictions, fishing seemed to get better, and it got so good, with the commercial fishery, that they were filling their quota faster and faster.

In the early days of recommending management advice, the scientists concluded that, well, we've got to quit giving single-catch quotas, and we're back to that though, but we've got to base our quotas on fishing mortality rate, so that the recommendations will go up as the population increases, and the population is gradually increasing. The main culprit that was keeping it down, according to the stock assessment people, was shrimp bycatch.

Well, in 2004 and 2005, we had a series of hurricanes that diminished the shrimp fleet, and then we also had, at the same time, imports of shrimp from farm-raised shrimp that were cheaper than what the local wild-caught shrimp itself were, and that put a lot of people out of business, and, in 2007, I think when the IFQ program first went in place, the council and National Marine Fisheries Service reduced quotas dramatically.

It wasn't until then that the population really started rebuilding, and so there has never -- There is a marine reserve out there of large sow snapper, and it was not big enough to rebuild this population, and yet this population change has always been the result of management action, irregardless of -- Excuse me, Wayne, but I'm using your word, but regardless of what the steepness is.

My concern is, and we've got ten stock assessments, ten data points, along this line, and to compare against, given all the work that's been done with the Great Red Snapper Count, tremendous work, and good work, and good science, but, when you look at the overall picture, it's still just one data point,

We're taking that one data point and jumping with it, and that makes me nervous, because we have spent thirty years rebuilding this population, and it may be bigger than what the stock assessment says it is, but the size of this population is the result of management and not some fluke of outside recruitment from a large population of adult fish that nobody is catching.

1 Whatever is out there in the uncharacterized bottom, we put there
2 through management, and my concern is that this is not the time to
3 risk everything we've worked for, and so, if the SSC decides to go
4 with something more stringent, like the direction they were going
5 last year, I am definitely going to oppose it, because it's wrong.
6 We've spent too much effort and too much energy into rebuilding
7 this population just to risk it at a whim.
8
9 If you look at some of your indices, you will see that they went
10 down in 2017 and 2018, and I don't know why, but is it coincidental
11 that that's the year the recreational industry was allowed to
12 exceed their allocation by the Department of Commerce? This
13 population responds to management, and that's what I'm saying, and
14 so we need to be careful of what kind of experiment we perform
15 here. Thank you very much.
16
17 **CHAIRMAN NANCE:** Thank you, Doug. We've got Harry and Shannon,
18 and I'm going just butt-in here for a second. If we have any runs
19 that we want to see from Matt tonight, we need to ask that now,
20 and, once I have these three individuals, I am going to cut it
21 off, and we have tomorrow where we can discuss -- I am looking for
22 recommendations and motions, those types of things, in the morning.
23 Harry. Ryan, to that point?
24
25 **MR. RINDONE:** Thank you, Mr. Chair. Just, before we continue down
26 that path of -- So, as far as the NMFS bottom longline survey data
27 are concerned, you guys can look at that up in the SSC archive
28 material for January of 2022, and all that stuff from that meeting,
29 including the updated NMFS bottom longline survey information, is
30 contained therein, and you can also review any of the past SSC
31 meeting materials, and everything is saved and available to you on
32 the council's website. Just to poke a little fun at Doug, see,
33 you messed us up in Amendment 1, and we've been trying to recover
34 from it ever since.
35
36 **CHAIRMAN NANCE:** Thank you.
37
38 **MR. GREGORY:** Don't mom at me.
39
40 **MR. BLANCHET:** I appreciate Doug's history lesson, and, having
41 been part of that, and not nearly as high-profile of a role as
42 Doug was, yes, it's been a ride, and my point, originally, was
43 much more mundane.
44
45 When we last discussed this, all of three months ago, in January,
46 one of the -- Probably one of the reasons we're talking about this
47 now is that we had an OFL of something north of twenty-five million
48 pounds, and an ABC quite a bit south of that.

1
2 We have had a lot of discussion, but we haven't really explicitly
3 laid out how we got from that twenty-five-point-something down to
4 the range of values that we have right here. Under the F 26
5 percent, the highest we've got is the all structure plus 15
6 percent, which still is not twenty-five-point-something million
7 pounds, and I just -- I think that we ought to have something on
8 the record of what the difference is between what we recommended
9 as an OFL in January versus what we're talking about here. Thank
10 you.
11
12 **CHAIRMAN NANCE:** Thank you, Harry. Shannon.
13
14 **DR. SHANNON CALAY:** Thank you so much, Chair. I did want to say
15 just a couple of things, one to reiterate something that John
16 Walter already said, in case it helps, but we are comfortable with
17 retaining the F SPR 26 metric, and the reason that is because, as
18 you recall, the SEDAR 52 assessment is essentially conducted
19 primarily on the portion of the population that experiences
20 fishing.
21
22 Most of the data that goes into that stock assessment is fishery-
23 dependent data, and, when we consider the Great Red Snapper Count
24 information, that basically says there is a much larger population,
25 but it's predominantly located in uncharacterized habitat, and so
26 it's essentially cryptic biomass, in a sense, as far as the SEDAR
27 52 population was concerned, and so the idea of retaining the F
28 SPR 26 metric is that it would apply to the fraction of the
29 population that commonly experiences fishing, which is why it's
30 important to understand that all structure plus 10 percent, or
31 plus 15 percent, calculation.
32
33 Now, if you wanted to assume that the fisheries would expand, and
34 they would exploit a much larger fraction of the UCB, then you
35 need to consider a higher SPR, like SPR 40 or SPR 50, and so you
36 would have a higher OFL then, and potentially a higher ABC, but
37 you would also have to rebuild, or maintain, the stock at a higher
38 fraction of the spawning potential ratio.
39
40 The other thing that I wanted to say is we can prepare, for example
41 -- We have the indices, and we have runs where we've used the
42 indices in interim assessment approaches, and there are many things
43 we can do, but we don't want to continue to produce results that
44 aren't being considered for use, and so what we need from the SSC
45 is very strong instructions on what is needed, and many things
46 could be prepared, but we're a little bit cautious right now that,
47 if the major concern is that the Great Red Snapper Count
48 information itself cannot be used the way we have proposed to use

1 it, then we're kind of at a standoff at that point. What I'm kind
2 of getting at is we're game to try some things to address your
3 concerns, but we need very succinct instructions.
4
5 **CHAIRMAN NANCE:** Shannon, thank you. From my perspective, I have,
6 from these tables, everything I need to make my conclusions, and
7 so I'm not looking for anything extra, and I have seen the
8 methodology that's been going in, and I think some of the SSC
9 members have a little uncomfortability with the methods, and those
10 can't be changed, but these -- You've done an excellent job in
11 showing us what the methods are, and then the results from those
12 methods, and so, unless someone on the SSC has another run, and we
13 can certainly entertain that right now. John.
14
15 **DR. WALTER:** I think my hand was left up by accident. I will lower
16 it.
17
18 **CHAIRMAN NANCE:** Okay. Seeing no hands or anything, we're going
19 to have public comment in a moment, and so we'll carry on for that,
20 but, as far as the SSC members are concerned, tomorrow, we will
21 start meeting at 9:00, and we need to make some recommendations,
22 some motions, on the data that we have, and then move forward.
23 We'll now open it up for public comment, the public comment period
24 of our meeting. Bob Zales, please.
25
26 **PUBLIC COMMENT**
27
28 **MR. ZALES:** First, I want to say that I appreciate the conversation
29 all day long, and especially this morning, when the VMS stuff was
30 coming up, and how some of the members of this panel fully
31 understand the issues with VMS and the supposed privacy that
32 fishermen are supposed to have with it.
33
34 Now, with AIS, I mean, and if legislation gets approved that's in
35 D.C. now by the AIS, AIS is going to take over, and so it's really
36 not going to make any difference, because that is completely
37 public, and you can go on any website that they have and pull up
38 any vessel anywhere in the world and figure out where they are.
39
40 Part of the problem has been, and there was a meeting back in Baton
41 Rouge, years ago, a council meeting, and this was before the forty-
42 fathom edges closed area was created, where the Fisheries Service
43 showed where all the grouper guys were fishing with VMS, and, now,
44 clearly, they weren't showing individual positions, and it was
45 just a group, and you didn't know who they were, but you knew
46 enough that, if you wanted to go catch a gag grouper, that's where
47 you went, and so they created the closure.
48

1   You need to be careful on how this VMS stuff is being used, and,
2   now that we're having to do this in the charter fishery, you're
3   fixing to see some more of that in there, and I have stressed,
4   over the past several years, and I will mention Panama City,
5   because that's where I fish from, that better than 95 percent of
6   the charter fleet in Panama City, Florida, fishes within a fifty-
7   mile radius of Panama City Pass.
8
9   I would argue that pretty much every charter fishery fleet across
10 the Gulf, and pretty everywhere in the country, is the same way.
11 You don't run like a commercial boat and move around. You fish in
12 a standard area, and when it comes to fishing, and this is an old
13 adage from age-old commercial fishermen, fishermen fish where the
14 fish are, and I don't care what kind of fisherman you are.
15
16 If you go try a new spot, and there's no fish there, guess what?
17 You ain't going back. You're going to go where you've been
18 productive and where you get the most action, and so, with that
19 being said, all this discussion about red snapper, and,
20 unfortunately, when the guys came out with this new study, what,
21 a year-and-a-half or so ago now, and put the news out to the world
22 that we now have three or four-times more red snapper than we ever
23 thought that was there, all the fishermen's eyes perked up, and
24 ears perked up, that, oh boy, we're going to get a tremendous bump-
25 up in red snapper.
26
27 Well, ever since that has happened, that number has steadily come
28 down, to where it's where you all are discussing now, and clearly,
29 whatever quota you put out there with red snapper, and this is
30 with any fish, whatever quota you give fishermen to do, they're
31 going to catch it. Unless the fish are not there, they're going
32 to be caught. If they're not there, then clearly you have a
33 problem.
34
35 You've got to be real careful on what you do with red snapper,
36 because, if you put too many out there, and then, a year from now,
37 we find out that we screwed up, it takes a while to catch up from
38 where you screw up, versus the other way to do that, and so, you
39 know, I'm kind of wondering where we would be today if the Great
40 Red Snapper had never happened, and we were under the traditional
41 stock assessment methods that were there.
42
43 Last year, there was a minor bump-up in quota, and I don't know
44 what the bump-up in quota would have been this year, but we've had
45 a steady increase in quota over the past several years, because
46 management has worked, and so, you know, it would be kind of
47 interesting, to me, to see a traditional assessment says this, and
48 the Great Red Snapper and what you all are doing with it says that,

1 and see where the two are, because clearly a normal assessment is
2 clearly based on, like Shannon said, where it's the fish have been
3 caught.
4
5 The fish may be scattered all across the Gulf of Mexico, and that's
6 great, but it's just a matter of trying to find them, but I
7 appreciate the work that you're doing, and just keep in mind about
8 what's happened over the years with red snapper and where we are
9 and where we hope to get to. Thank you very much.
10
11 **CHAIRMAN NANCE:** Bob, thank you so much. Any questions from the
12 SSC? Okay. Jim. Jim, it looks like you've lost your audio, and
13 we'll come back to you. Michael Drexler, please.
14
15 **MR. DREXLER:** Good afternoon. Thanks, and this is Michael Drexler
16 with Ocean Conservancy, and thanks again for the opportunity to
17 comment. I won't rehash the points that I made earlier, but I did
18 want to clarify one point, and that's on how realistic it is to
19 produce catch advice in 2024.
20
21 Looking at the schedule of the operational assessments, it looks
22 like it's scheduled to wrap in Q4 of 2023, and all of my years
23 sitting in the back of the room suggests that getting management
24 advice produced for the 2024 season is unlikely, and it will
25 probably roll over into 2025, and so that's an extra year or two,
26 I think, on realistically implementing catch advice, especially
27 given all of the complicating factors that are going to be rolled
28 into this research track assessment, like FES and state monitoring
29 data, and so that's one point that I wanted to make.
30
31 The second is that I am -- Others have made the comment, but I am
32 really struggling to understand how this catch advice could link
33 to the standing management criteria, and it's clear that a lot of
34 work has been done to link fishing mortality rates to the standing
35 assessment, and that's pretty complicated, and so one idea I had,
36 in looking through this, might be to try and fill out the
37 management criteria table that is typically produced for a stock
38 assessment and demonstrate how this advice is linked to those
39 standing criteria. That could be a good way to resolve that issue,
40 because I am still struggling to understand it myself, and I would
41 guess that others are.
42
43 Lastly, I have made my comments on the importance of historical
44 trends relative to a singular data points, and, you know, I still
45 view these catch rates as risky, and, if we make a mistake here,
46 given the status of some of these other reef fish stocks, we really
47 could be putting some people's livelihoods and recreation at risk.
48 Thank you

250

1
2 **CHAIRMAN NANCE:** Thank you so much. Comments from the SSC? Eric.
3
4 **MR. SCHMIDT:** Good afternoon. Eric Schmidt, Fort Myers, Florida.
5 I have just a quick comment, and I know for everybody it's been a
6 long day. Regarding the VMS, twenty-three years ago, I opposed
7 the installation of VMS, based on the analysis that I knew what
8 you were going to do with the data, and you were going to use it
9 against the fishermen, and, eventually, you would use it as a
10 management tool, to figure out where they were going to fish, and
11 I figured that eventually what you would do is concentrate the
12 areas where we actually fished and then close them down.
13
14 Then, about six years ago, I was at a council meeting in Naples,
15 Florida, and I was reading through the document for Coral Amendment
16 9, and then that's when I first saw the little grids, the little
17 one-mile-by-one-mile squares, and they were color-coded for
18 fishing activity, and then, where the fishing activity was, that's
19 where you were going to close the areas, but somebody this morning
20 made a very salient point as to, if you give me that map, and say
21 it's a one-degree-by-one-degree-of-longitude, and you break it
22 down by one-mile squares, and you give me the technology that's
23 available right now, and say StrikeLines Charts, or CMOR Charts,
24 some of the bathymetric overlays, I will find out where you're
25 fishing.
26
27 If you show me that chart, and I don't have anything in that one
28 area, I will go spend time in there, and so fishing information
29 was supposed to be confidential, but it turns out that it's really
30 not, and, if you're a good captain, and you can look at a piece of
31 paper, you're going to find out where your competition is fishing,
32 and so that's pretty much it.
33
34 **CHAIRMAN NANCE:** Thank you. SSC, any questions for Eric?
35
36 **MR. GREGORY:** Yes. Eric, it's good to hear your voice, but what
37 we did was take the longline fishing areas and mapped them out
38 over the Pulley's Ridge area, and then we did not close the area
39 where the fishermen were fishing, but we closed the area around
40 that, because the contention was that it's not a trap, and it's
41 not anchor, and they don't do the damage to the types of coral
42 that are there, and so, in that case, it was good to see that the
43 VMS data was used to help the fishermen stay in business. That's
44 all.
45
46 **MR. SCHMIDT:** Well, Doug, and I have testified to this at council
47 meetings previously, and that Pulley Ridge area, where it is
48 closed, where you cannot anchor, I see ships in there all the time,

1 and they're dumping fifty-ton anchors, and a ship will sit there
2 for a week, waiting to head to Galveston or New Orleans, waiting
3 to pick up or to drop off, and I realize the council can't do
4 anything about that, but a forty-foot longline or bandit boat can't
5 go in there and drag their seventy-five-pound anchor for fishing,
6 and so I've always heartburn with that aspect of the Pulley Ridge
7 closure.
8
9 **CHAIRMAN NANCE:** Thanks, Eric. Jim.
10
11 **MR. JIM ZURBRICK:** I have to take a moment here, and we haven't
12 had rain up here for two months, up in north Florida, and we just
13 had a storm, and so I got cut off there earlier, but, hey, listen,
14 and it's always good to listen in, and Doug and Luiz are two of my
15 favorites, but we were talking about an increase, because of the
16 red snapper, and whatever that increase could be, and I agree
17 wholeheartedly that management is what gave us all of this, tough
18 love, very tough love, but, every time I hear about, well, maybe
19 we'll get 10 percent of an increase, and it's warranted, I just
20 don't think about that being 10 percent and that's what people
21 take home with them in a recreational fishery, because that
22 700,000-pound increase of 10 percent of the recreational would
23 amount of hundreds of thousands of pounds of discards.
24
25 That is where I would have a problem with getting the increase.
26 I'm a commercial fisherman, and I would love to have more fish,
27 but I know that our discards are insignificant -- I mean, they're
28 significant, but they're insignificant in the overall scheme of
29 how many discards there are in this red snapper fishery, and that's
30 just some points there, and sometimes I almost wish that we didn't
31 get an increase, even though I would love one, because I don't
32 want to see the waste.
33
34 The second thing is that, and I don't know if everybody knows this,
35 but Mote Laboratory has put one of the most modern camera systems
36 on my boat, and I did my third trip with it, and so when, earlier
37 today, you all were talking about observer and data off the
38 vessels, I just came in with my camera system, and, in fact, Mote
39 had a representative here, and I can document every single fish
40 that came aboard and every discard that was discarded, and I think
41 it's better coverage that an observer, that might get seasick and
42 goes down for a few hours, trying to get their composure.
43
44 I am a camera person, and I didn't, at one time in my life, think
45 so, but, as I'm closing out my fishing years, this resource is so
46 important to me, to leave it to someone, that I justified putting
47 it on, and, by the way, I've had it on for three trips, and I've
48 had three of the best trips that I have ever had, and so, for

1   someone to say, well, it's going to interfere with how you fish,
2   it might have, and it made me a better fisherman, and so I'm very
3   pro-camera, and I do have to carry an observer here on April 1,
4   and I am anxious to compare the analysis of what they say came
5   aboard versus the camera, when they run it through the computer
6   and do the artificial intelligence on it, and that's about it. I
7   really thank you all for your time.
8
9   **CHAIRMAN NANCE:** Thank you very much, and I appreciate you taking
10 the observer.
11
12 **MR. ZURBRICK:** Thank you.
13
14 **CHAIRMAN NANCE:** Any questions from the SSC for Jim? Jim, thank
15 you very much for your comments.
16
17 **MR. ZURBRICK:** Thank you.
18
19 **CHAIRMAN NANCE:** Susan.
20
21 **MR. RANDY BOGGS:** Hi, guys. This is Randy Boggs from Orange Beach,
22 Alabama, and I've been charter fishing out of here for a long time.
23 We're seeing a lot of smaller fish off of Alabama, a lot of fish
24 that are not keepers. After the hurricanes, there's been lots and
25 lots of smaller fish in here, and we have the commercial fishermen
26 that are doing really well with their fishing, and they're allowed,
27 with the smaller fish, a thirteen to a sixteen-inch fish, that we
28 can't keep, and Bob Zales was right.
29
30 The commercial fishermen are fishing where the fish are, and I
31 think, at this time, with what I am hearing from some of the boats
32 from Tampa and Clearwater, all the way up through up here, the
33 western Gulf seems to have dodged the storms and still have a
34 pretty good biomass of larger fish, and I'm talking about sixteen-
35 inch and larger fish, that the charter/for-hire and the
36 recreational fishermen can catch, but to bring out a lot more fish
37 right now, and to increase more than what we have, I think that's
38 really, really premature, because there's a lot of fish out there
39 that -- There's not the numbers of fish out there that we saw three
40 or four or five years ago, and the hurricanes have really hurt us
41 here, and the amount of fishing pressure, with the state seasons,
42 have not done us any favors, and so I'm one opinion, but I think
43 that releasing more fish right now would not be a good thing for
44 the fishery, in the long-term. Anyway, that's all I've got, guys.
45 Thank you.
46
47 **CHAIRMAN NANCE:** Randy, thank you so much for that input. Any
48 questions from the SSC? It doesn't look like it, but, Randy,

1 thanks for being on the line and for your comments. We'll go ahead
2 and adjourn the meeting, and we'll see you tomorrow at 9:00 a.m.,
3 and you all have a good evening.
4
5   - - -
6
7   March 10, 2022
8
9   THURSDAY MORNING SESSION
10
11   - - -
12
13 The Meeting of the Gulf of Mexico Fishery Management Council
14 Standing and Special Reef Fish, Special Socioeconomic & Special
15 Ecosystem Scientific and Statistical Committees reconvened on
16 Thursday morning, March 10, 2022, and was called to order by
17 Chairman Jim Nance.
18
19 **CHAIRMAN NANCE:** We'll go ahead and start our SSC meeting this
20 morning. I appreciate -- Most everybody is in attendance, which
21 we appreciate. I put Matt's presentation up, and do we have any
22 further discussion on it or any motions that people would like to
23 present? David.
24
25   **EVALUATION: UPDATED SEFSC CATCH ANALYSIS FOR GULF OF MEXICO RED
26   SNAPPER USING THE GREAT RED SNAPPER COUNT**
27
28 **DR. GRIFFITH:** Thanks, Mr. Chairman. Do you want me to read this
29 email from this guy, this fisherman?
30
31 **CHAIRMAN NANCE:** Yes. Last night, David received a message, a
32 public comment, and so we wanted to enter that into the record.
33
34 **DR. GRIFFITH:** It's from Troy Frady, and it says, Dr. Griffith, I
35 wanted to weigh-in on what I am seeing with the red snapper fishery
36 off the coast of Alabama while you are still meeting with the SSC.
37 I have been fishing professionally for the past twenty years out
38 of Orange Beach, Alabama. I own and operate a federally-permitted
39 charter boat, and my company is distractioncharters.com.
40
41 I run over 200 days a year, from way south and far east to west
42 off the Alabama coast, and I spent more days on the water than any
43 scientist around. No matter what you hear from any scientist, we
44 have a big problem with our red snapper fishery, in my professional
45 opinion.
46
47 The fishery is in trouble, and it is what we call negative
48 trending. In lay terms, the rate of removal of red snapper from

                              254

1 our Gulf is far exceeding its ability to replenish itself. It's
2 as bad as it was prior to 2007. That's pretty much it.
3
4 **CHAIRMAN NANCE:** Thank you, and we heard that, I think, a few times
5 yesterday in public comment, and I think there were three fishermen
6 that came on and talked about that, and so we certainly appreciate
7 those comments during our public period.
8
9 Anyway, last night, I was thinking that we had this presentation
10 from Matt, and we had some good discussions, and we've gone back
11 and forth with the good and the bad and those types of things for
12 these things, and so I guess, to move us a little forward, I would
13 thinking I would -- I made a motion, or I have a motion that I can
14 present that will move us at least off center, I think, so we can
15 start to discuss which way we want to proceed, and so, Jessica, if
16 you would put that motion up.
17
18 Anyway, this was a motion that I put up. **The SSC finds the catch**
19 **analysis developed by the Southeast Fisheries Science Center,**
20 **informed by age-two-plus red snapper abundance data from the Great**
21 **Red Snapper Count for Texas, Alabama, Mississippi, post-**
22 **stratification abundance data for Florida, and the LGL red snapper**
23 **abundance data for Louisiana is the BSIA and is useful for**
24 **development of OFL and ABC recommendations.** If we can have a
25 second, we can have a discussion about this.
26
27 **DR. ISAACS:** Second.
28
29 **CHAIRMAN NANCE:** Jack, thank you. Anyway, what I -- Last night,
30 I was thinking about all the different ramifications and things,
31 and the way I'm seeing this is we have had historical interim catch
32 analysis and those types of things, interim assessments, that kind
33 of move us forward on OFL and ABC recommendations, but we have
34 this abundance data that we've gathered from the Great Red Snapper
35 Count study, and also from the LGL abundance study, which gives us
36 an input of there seems to be more fish out there, and so we need
37 to somehow incorporate that into this.
38
39 If we have a mechanism to be able to do that, and the Center has
40 given us that catch analysis, and it has OFL and ABC
41 recommendations in it, I think it's useful to be able to use this
42 and be able to come up with some satisfactory OFL and ABC
43 recommendations that we're willing to put forward to the council,
44 and so that's my rationale behind this. Anyway, I would open the
45 floor up for discussion. Harry.
46
47 **MR. BLANCHET:** Thank you, Mr. Chairman. If you would consider
48 this a friendly amendment, after "BSIA", insert "for abundance

1 information", because a lot of what we are deriving is not just
2 from those two data sources, but also from the analysis provided
3 by the Southeast Fisheries Science Center, and I think that a lot
4 their work is important for the translation of the abundance data
5 into catch advice.
6
7 **CHAIRMAN NANCE:** I appreciate that change. Jack, you're okay with
8 that?
9
10 **DR. ISAACS:** Yes, I am.
11
12 **CHAIRMAN NANCE:** Thank you, and, Harry, thank you for that input.
13 Jason.
14
15 **MR. ADRIANCE:**   Thank you, Mr. Chair.   Just more for my
16 clarification, when the motion says, "the catch analysis", is that
17 intended to be for the suite of analyses we saw, or are you looking
18 for a particular analysis out of that deterministic versus Monte
19 Carlo, just for my clarification. Thanks.
20
21 **CHAIRMAN NANCE:** I was looking at the suite of analyses, what Matt
22 presented yesterday to us, and we can utilize those analyses for
23 development of an OFL and ABC. Any other discussion? Jason, does
24 that answer your question?
25
26 **MR. ADRIANCE:** Yes, sir.
27
28 **CHAIRMAN NANCE:** Thank you. Any other discussion? Sean.
29
30 **DR. POWERS:** This is just kind of a point of order, simply going
31 back to a BSIA determination involving the Great Red Snapper Count,
32 and can Ryan or Carrie tell us whether we can participate in this
33 vote or not, and, I mean, I know the idea was the investigators on
34 these projects, because I know, once they were accepted as BSIA,
35 we could then vote on catch advice, but this seems to be another
36 BSIA determination. I don't have any problem with the motion, but
37 I just wanted Carrie or Ryan to --
38
39 **CHAIRMAN NANCE:** Absolutely, Sean. Thank you. Ryan.
40
41 **MR. RINDONE:** It's an interesting question, Sean. The Great Red
42 Snapper Count report, and the estimate of absolute abundance
43 contained therein, the analyses that were used to generate that,
44 and that's not what is being voted on here, and this is informed
45 by that, but it's not -- I mean, it's based upon it, and I don't
46 think it's the same thing anymore, and I think that point has been
47 well argued yesterday that what the GRSC team put together and is
48 published as its final report is not what is not -- It's not

1 apples-for-apples what is being worked on here.
2
3 It's my opinion that, yes, you can vote on this, because this is
4 informed by work that you guys contributed to, but it's not that
5 work anymore. It's a different analysis.
6
7 **CHAIRMAN NANCE:** I agree with that.
8
9 **MR. RINDONE:** In keeping with National Standard 2 though, and
10 making judgments for the SSC about its peer review of work like
11 this, the sentiments of the SSC also have weight, and so we're in
12 a situation where the SSC is riddled with expertise on this matter,
13 and so you can, obviously, elect to abstain, if you choose to, but
14 I think that you can absolutely vote on this.
15
16 **CHAIRMAN NANCE:** That's my opinion also, Sean, the fact that we
17 have, at previous meetings, said that the Great Red Snapper Count
18 data was BSIA, and we're simply using that data, and we're saying
19 that the catch analysis provided by the Center is what we're saying
20 is the best scientific information available now.
21
22 **DR. POWERS:** Okay. Thanks, Jim.
23
24 **CHAIRMAN NANCE:** You're welcome, Sean. Doug.
25
26 **MR. GREGORY:** Thank you, Mr. Chair, and good morning. Given the
27 discussions we've had in the last year over this data and the
28 uncertainties that have been identified, the numerous references
29 to SEDAR 74 being the place where we're going to evaluate this,
30 and we'll straighten this out there, and we'll -- You know, a
31 number of references to relying on the SEDAR process to clean this
32 up.
33
34 Then, given the sparseness of the sampling and the way it was --
35 I think the sampling was simply too sparse to extrapolate to the
36 areas that it was extrapolated to, and this is a herculean effort,
37 and I applaud everything about it, except I do not think it's
38 suitable for estimating OFL and ABC at this point, and so I would
39 oppose this, and a good example of what I'm talking about with the
40 sparseness as an extrapolation is we still have the West Florida
41 Shelf comprising half of the entire Gulf of Mexico red snapper
42 abundance, and that just boggles my mind, that anybody can accept
43 that, and so I would definitely oppose the use of this data for
44 calculating OFL and ABC. Thank you.
45
46 **CHAIRMAN NANCE:** Thank you, Doug. David.
47
48 **DR. CHAGARIS:** Thank you. As far as the BSIA determination and

1 the estimates that have come out, I think the discrepancy between
2 the LGL study and the Great Red Snapper Count, along with some of
3 the comments that were made during the discussion about post-
4 stratifying Texas, I mean, I think the -- For me, that really threw
5 the estimates for Texas completely into question, for me, and so
6 I really have a hard time seeing that as BSIA until we're able to
7 reconcile the differences between LGL and Texas.
8
9 We don't know which one is right and which one is wrong or why,
10 and, as far as the catch analysis goes, I mean, it's the only
11 scientific information we've been provided, but I don't think it's
12 the best, and I think the best scientific information would have
13 been to have used SEDAR 52 to try and understand and try to scale
14 up and integrate this point estimate over the last year-and-a-
15 half, and, unfortunately, that didn't happen, and so I don't really
16 support this motion as well, based on both the data and the
17 analysis. Thank you.
18
19 **CHAIRMAN NANCE:** Thank you. David, I have just one question. When
20 you're talking about the LGL study, and then you're referring to
21 Texas, I am not following that logic.
22
23 **DR. CHAGARIS:** Right, and so I'm talking about the estimated
24 densities that were twenty-times different on certain habitats,
25 and why was that, and it could be something to do with how the
26 acoustic data were analyzed, and I'm not sure, but, really, it
27 comes down to what do these total fish densities mean from the
28 acoustic data, and I think that the analysis and discussion kind
29 of threw all that into question for me. If we can't count, you
30 know visually identify these species, the total fish density of
31 species, then what confidence should we have in the estimate as a
32 whole?
33
34 **CHAIRMAN NANCE:** All right. Thank you. I understand now. Jim
35 Tolan.
36
37 **MR. TOLAN:** Thank you, Mr. Chairman. I am going to echo a little
38 bit of what Doug brought up, and it really does focus in on the
39 BSIA determination and setting OFL and ABC from that, and I'm a
40 little uncomfortable with it, and I think, as a whole, as a
41 committee, we were uncomfortable with it last time, when we had
42 the original Red Snapper Count, and we set the OFL -- As the basis
43 for the OFL, but, when it came to ABC, we all stepped back and
44 said, well, the other information we have, the longline
45 information, the trends just don't match up, and so we're going to
46 use that as the ABC, and so I think, earlier, we were uncomfortable
47 with it, and I am still not real comfortable setting catch
48 determination based on -- Even though it's a great piece of work

1 that the Science Center did, with the information that was provided
2 to them, I'm still not comfortable with it, in terms of catch
3 determination. Thank you.
4
5 **CHAIRMAN NANCE:** Thank you, Jim. I think one of the differences
6 is that we have new information that we put into the catch
7 analysis, and, unfortunately, the last time, we used the catch
8 analysis to develop and recommend an OFL, and then we came from a
9 whole different arena and developed our ABC, and so I'm a little
10 bit worried about having those two -- An OFL from one thing and an
11 ABC from another, and so I think -- One of the reasons that I put
12 this up is we felt comfortable developing an OFL last time from
13 this, and so I feel like we can be comfortable making an OFL
14 recommendation, and then we have a myriad of choices for ABC, and
15 I think one of those ABCs we should be able to feel comfortable
16 with recommending to the council, knowing all the risks that are
17 involved in -- The risks, and also the uncertainty involved in the
18 analysis. Roy.
19
20 **DR. CRABTREE:** I think that's a really good point, Jim, because it
21 did trouble me, and I think it happened at the March meeting last
22 year, and so before I came on the SSC, but it did, when I went
23 through it all, and it jumped out at me that the basis for the OFL
24 and the basis for the ABC were actually very different, and my
25 understanding of how the process works, and the guidelines, is
26 that the ABC should be derived from the OFL, as reduced to account
27 for scientific uncertainty, and so I think that's a problem that
28 needs to be cleaned up.
29
30 I mean, we do have a host, and a remarkable amount, of new
31 information that I think we can't just -- I am worried, if we don't
32 incorporate it into this, that we'll be seen as ignoring it
33 somehow, and it would be nice to have the SEDAR process and get
34 through all of that, and then make our decision, but the trouble
35 is that's a couple or three years down the road, and we've been
36 asked, multiple times now, by the council to try and develop some
37 advice for them, and I think we have some responsibility to try to
38 be responsive to what the managers are asking for from us.
39
40 I am going to support the motion now, and we did hear public
41 comment about what's going on in the eastern Gulf, and people are
42 seeing some declines in catch rates, and I think we need to take
43 that into account, when we come to setting the ABC, because we
44 have analyses here that don't make major changes to the ABC, and
45 so the fact that we're going to use this set of analyses doesn't
46 mean that we're going to dramatically increase the ABC. That, we
47 have to determine.
48

1   I think we really need to caution the council of the possibility
2   of seeing localized depletion in heavily-fished areas, and I think
3   that's what is showing up in the longline index, and I think that's
4   what they're starting to hear from fishermen, and so they're going
5   to have to figure out how to deal with that, but I think that is
6   a problem that the council needs to deal with, and I think that
7   speaks towards being cautious and conservative when we set the
8   ABCs, but, for now, I am going to go ahead and support Jim's
9   motion.
10
11 **CHAIRMAN NANCE:** Thank you. David.
12
13 **DR. GRIFFITH:** I would second that, and I think that's very well
14 stated, what Roy just said, and I also support this, but, also,
15 just because it's -- It doesn't establish any OFL or ABC
16 recommendation, and it just says that this information is useful
17 for the development of it, and I do think that we have had this
18 really abundance of very good studies that we have to inform this,
19 and there is a good possibility that the snapper population has
20 shifted throughout the Gulf, because of things like climate change
21 and the oil spill in 2010 and things like that. Anyway, I also
22 would support this.
23
24 **CHAIRMAN NANCE:** Any other discussion? Hearing none, I think we'll
25 need a roll call vote on this one. Jessica, go ahead and go
26 through that, please.
27
28 **MS. MATOS:** Luke Fairbanks.
29
30 **DR. FAIRBANKS:** Yes.
31
32 **MS. MATOS:** Jason Adriance.
33
34 **MR. ADRIANCE:** Yes.
35
36 **MS. MATOS:** Harry Blanchet.
37
38 **MR. BLANCHET:** Yes.
39
40 **MS. MATOS:** Benny Gallaway.
41
42 **DR. GALLAWAY:** Before I vote, I want to do the same, and I want to
43 check to make sure that I'm eligible to vote, since I did
44 participate in the LGL red snapper abundance study.
45
46 **CHAIRMAN NANCE:** Yes, and, in our opinion, you are, because this
47 is not a BSIA for that particular study, and it's a study that is
48 using data from that, and so you would be eligible.

```
 1
 2  DR. GALLAWAY:  With that, I vote yes.
 3
 4  MS. MATOS:  Paul Mickle.
 5
 6  DR. MICKLE:  Yes.
 7
 8  MS. MATOS:  Will Patterson.
 9
10  DR. PATTERSON:  I abstain.
11
12  MS. MATOS:  Richard Woodward.
13
14  DR. WOODWARD:  I will abstain.
15
16  MS. MATOS:  Jim Tolan.
17
18  DR. TOLAN:  No.
19
20  MS. MATOS:  Sean Powers.
21
22  DR. POWERS:  Yes.
23
24  MS. MATOS:  Trevor Moncrief.
25
26  MR. MONCRIEF:  Yes.
27
28  MS. MATOS:  Doug Gregory.
29
30  MR. GREGORY:  No.
31
32  MS. MATOS:  Dave Chagaris.
33
34  DR. CHAGARIS:  No.
35
36  MS. MATOS:  Lee Anderson.
37
38  DR. ANDERSON:  Abstain.
39
40  MS. MATOS:  John Mareska.
41
42  MR. MARESKA:  Yes.
43
44  MS. MATOS:  Jack Isaacs.
45
46  DR. ISAACS:  Yes.
47
48  MS. MATOS:  Steven Saul.
```

1
2 **DR. SAUL:** No.
3
4 **MS. MATOS:** Steven Scyphers.
5
6 **DR. SCYPHERS:** Yes.
7
8 **MS. MATOS:** Jim Nance.
9
10 **CHAIRMAN NANCE:** Yes.
11
12 **MS. MATOS:** David Griffith.
13
14 **DR. GRIFFITH:** Yes.
15
16 **MS. MATOS:** Roy Crabtree.
17
18 **DR. CRABTREE:** Yes.
19
20 **MS. MATOS:** Luiz Barbieri.
21
22 **DR. BARBIERI:** No.
23
24 **MS. MATOS:** Michael Allen.
25
26 **DR. ALLEN:** No.
27
28 **MS. MATOS:** Cindy Grace-McCaskey.
29
30 **DR. GRACE-MCCASKEY:** Yes.
31
32 **MS. MATOS:** Josh Kilborn.
33
34 **DR. KILBORN:** No.
35
36 **CHAIRMAN NANCE:** Thank you. **It's fourteen to seven, and so the**
37 **motion carries.** I appreciate all of the discussion. I mean, we
38 have had a -- Well, I think more than one day, because we've
39 discussed this topic for several SSC meetings, and so I fully
40 understand all of the reasons why some support and some don't. I
41 mean, I am uncomfortable with parts of it too, and it's a matter
42 of being able to move forward, utilizing data that's available, in
43 the best way possible. Let's go ahead and -- So we have that study
44 there, and do we have any motions for OFL and ABC recommendations
45 from those tables?
46
47 We need discussion on it, and I think we have static, and we have
48 deterministic, I think, if I remember correctly, and so one of

1 those are better than another, and so let's discuss that, or bring
2 up a motion on that. Roy.
3
4 **DR. CRABTREE:** Well, I think maybe the way to approach this -- I
5 think we've already established that we're going to base this on
6 the post-stratified for Florida, LGL for Louisiana, and the GRSC
7 estimates for the other states, right, and so that's -- We're all
8 set on that. Maybe the way to come at this now is to get to an
9 OFL, and, as I look at it, I guess the appeal, to me, is in the
10 ensemble UCB analysis.
11
12 **CHAIRMAN NANCE:** Jess, could you bring up the presentation, please?
13 There you go. Then is it the very last one?
14
15 **DR. CRABTREE:** It's not the last slide, but it's close to it.
16
17 **CHAIRMAN NANCE:** That one right there?
18
19 **DR. CRABTREE:** It's that one right there, and what I am thinking
20 now is so we're going to -- If we think the new assessment will be
21 done in 2024, hopefully, and the council will specify a new catch
22 level for 2025, do you think, Ryan, and that would be the goal?
23
24 **MR. RINDONE:** Based on just timing and how this stuff runs, the
25 soonest that any updated catch advice from this could be
26 implemented would be for the 2023 fishing season, and then so it
27 would be in place for 2023, and we would presume that, by the end
28 of 2023, or early 2024, you guys would have seen the results of
29 the operational assessment from SEDAR 74, and the soonest that
30 updated catch advice from that could get on the books would be for
31 2025.
32
33 You would be looking at this catch advice being in place for
34 approximately two years, or perhaps three, if development of
35 whatever comes out of SEDAR 74 takes a little bit longer, with it
36 also being noted that red snapper is an IFQ-managed fishery for
37 the commercial sector, and the pounds released to the fishermen
38 are released on January 1.
39
40 Unless there is something that it seems pretty certain that the
41 council is or is not going to do, those pounds are going to be
42 released on January 1, and you can't get them back once they go
43 out, and so, if something is not ready to be implemented by January
44 1 of 2025, then those commercial pounds are going to be released.
45
46 **DR. CRABTREE:** Right, and so those are issues that the council and
47 the Fisheries Service will have to deal with, but I'm sort of
48 thinking that we're looking at something that is going to be in

place for 2023 and 2024, and then hopefully updated by a new number in 2025, and so the three-year average would encompass those two years, and so my leaning, right now, and I am not really making a motion at this point, because I would like to hear some discussion, would be -- That would lead me to set the OFL at 18.87 million pounds, which is a reduction, I believe.

I think the OFL that we set before was twenty-five or something, and so that's a reduction in the OFL, but that's where I am at this moment, in terms of my leaning towards an OFL, is 18.87.

CHAIRMAN NANCE: Is there discussion on that or any other OFLs that are in this presentation? Sean, please.

DR. POWERS: Again, I will discuss my reservations about the ensemble approach, and that is just that it's just simply 8 percent UCB, which is lower than the 10 or 15 percent that we've kind of talked about in the past.

I think, when you look at the data from the Great Red Snapper Count and LGL combined, we're showing a stock that is two or two-and-a-half-times, and maybe not three-times, but two-and-a-half times as large, and we're going to propose a 5 percent increase. I mean, I think, for me, that's really not using the new information, to any large degree.

I do recognize there is some concerns in several pockets of the eastern Gulf in particular, about, in my opinion, the average size decreasing so much, and so, I mean, truly, if we had true sub-regional management, we could account for that, but we have to set a Gulf-wide ABC right now, and so that is balanced a little bit with the localized decreases in average size that we're seeing, and others have talked about, but I get back to my notion that I don't think there's anything wrong, or any reservations that I have, with the west.

I think they could take a much larger increase, but, right now, we're tied to just Gulf-wide, and so I really think that the ensemble approach, with just the 8 percent UCB equivalent, is a little on the conservative side, when we think Gulf-wide.

CHAIRMAN NANCE: Thank you, Sean. Any recommendations at this point?

DR. POWERS: I would like to hear some more discussion, like Roy, before.

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

1
2 **MR. GREGORY:** Thank you, Mr. Chair. To that point, we really don't
3 know how much of the fishery is in the unconsolidated bottom, 8
4 percent or 10 percent, and 15 percent is just an upper limit, and
5 so an 8 percent and 10 percent is about the same, and the advantage
6 of the ensemble is it gives us a quasi-joint distribution in which
7 to apply the P* method that we've used in the past.
8
9 The other thing, and, Matt, I'm sorry to do this to you, but I
10 have a question about the numbers in this table. The means
11 increase with increasing years, and the 0.4 P* decreases until
12 2024 and then increases slightly, and that could just be rounding
13 error, but the P* of 0.3 decreases, the opposite of the mean. It
14 decreases from 2022 to 2026, and so, if you could double-check
15 those numbers, I would appreciate it. Thank you.
16
17 **MR. SMITH:** Hi, Doug, and so the numbers are correct, and, when I
18 first saw these, it caught my attention too, and I dug back in and
19 was looking at what was going on here, and so what happened, the
20 smoke and guns for what you're seeing with those numbers, is, in
21 this simulation, which comes out of that Monte Carlo approach,
22 where we're adding uncertainty in different places, when we add
23 uncertainty alone to the recruitment portion, and so if I just did
24 recruitment and I don't change the number of two-plus or the Fs on
25 the fleets or the depletion, it causes this to happen.
26
27 Where we're used to seeing direction step-ups in the yield, whether
28 it's increasing through time or decreasing through time, and the
29 reason this is taking place is because a big part of why we see
30 those ski slopes, or the downhill trajectory in the yield, has to
31 do with the existing age composition.
32
33 Once we get to the equilibrium portion of the projection, where
34 the age composition is constant, your yield will smooth out,
35 because it's interacting with the selectivity in a consistent
36 manner. Early on in the projections, you have some existing age
37 composition, which is not at equilibrium. When I added the random
38 noise into that recruitment, I effectively am smoothing out through
39 that composition, through the simulation process, and so it's got
40 the pattern that it starts with, and then that pattern shifts all
41 over the place, depending on how that initial age composition comes
42 out
43
44 You almost end up with a smooth, over the aggregate of a thousand
45 simulation runs, composition early on, like what we're used to
46 seeing, later on in the projections, and so the variable up and
47 down in those landings has to do a little bit with the population
48 increasing, and also just a little bit with noise, from the fact

1 that they only did a thousand simulation runs, rather than 10,000
2 or 100,000 or whatever. I did look into that, because it caught
3 my eye, and, from the tests that I did, the reason you're seeing
4 it has to do with that recruitment noise in the simulation, and I
5 hope that helps.
6
7 **MR. GREGORY:** Very much. I am not surprised that you dug into it
8 that much. Thank you. You're very thorough. Thank you.
9
10 **CHAIRMAN NANCE:** Thank you, Doug, and thank you, Matt. Jason.
11
12 **MR. ADRIANCE:** Thank you, Mr. Chair. Sean covered what I wanted
13 to say about the ensemble and my feelings regarding that, and I am
14 wondering if, instead of jumping straight to OFL, should we
15 consider settling the UCB issue first, or picking a particular --
16 Well, I will leave it at that. I will wait for some more
17 discussion. Thanks.
18
19 **CHAIRMAN NANCE:** Sure. It's open for discussion on all topics,
20 and so go ahead. Steven Scyphers, please.
21
22 **DR. SCYPHERS:** Thank you, Mr. Chair. I think Jason was actually
23 going in the direction of what I was going to say. I mean, my
24 overarching concern, at this point, is how we explain a
25 justification for a large drop in OFL, if that's what ends up
26 happening, from the decisions we made last March to what we're
27 considering here.
28
29 It does seem like the UCB decision is what would drive such a big
30 reduction in OFL, and considering -- I do appreciate that we've
31 heard some very concerning comments from fishermen attending the
32 meeting, and one question I have, and I don't know if Ryan or
33 someone would chime-in on this, is I would be curious if there's
34 a sense for a broader, more representative perspective on the
35 fishery.
36
37 I know the fishermen feedback tool has been run actively, and
38 they've been getting a lot of feedback on it. From some of the
39 surveys and interview work that we have done, we have definitely
40 heard some of the other end of the spectrum, that there's a lot of
41 fish, and some of the sentiments that like you have to fish through
42 snapper to get to other things, and so I do think there's a large
43 portion of the stakeholder base that will want an explanation if
44 there's a large drop in OFL, and so just thinking about how we
45 work through UCB part does seem really important, if that's what
46 is going to have a large impact on the numbers. Thanks.
47
48 **CHAIRMAN NANCE:** Thank you, Steven. Let me just comment on the

1 OFL. If you look at all the scenarios, none of the OFLs are near
2 what they were at our other meetings, and it has to do with changes
3 in the data, the input into the model, so that -- Anyway, that is
4 one of the things that we're dealing with, and so OFL, and all the
5 scenarios, and I think the highest OFL available is twenty million,
6 those types of things, and so, anyway, there has been a change in
7 that.
8
9 **MS. CARLY SOMERSET:** Thank you, Mr. Chair. Thanks, Steven, for
10 that comment, and so, just to comment on the fishermen feedback
11 for red snapper, and so it's currently open, and we are encouraging
12 the public to provide their comments, and so they're open for a
13 month, and we'll have other reminders before it closes, and I
14 believe that's a couple of weeks left in that comment period, but,
15 as you said, we are seeing quite of bit of comments, and even on
16 Facebook.
17
18 If you go on our Facebook page, people are saying that they're
19 having to fish through snapper, and just an abundance, and so, I
20 mean, it does -- There is a broad spectrum of what people are
21 seeing, their observations, and, obviously, that can differ by
22 region, but, yes, it is still open, and we're still looking for
23 comments, and I appreciate what you said, Steven. Thanks.
24
25 **CHAIRMAN NANCE:** Thank you, Carly. Thank you, Steven. Will.
26
27 **DR. PATTERSON:** Thanks, Mr. Chair. As far as the idea that Captain
28 Frady talked about earlier, about seeing declines in areas that he
29 fishes in the north-central Gulf of Mexico off of Alabama, and
30 then sort of trying to rectify that with what Steven mentioned,
31 and what Carly just talked about, as far as input, it's important
32 to remember that the Gulf is a big place, and we can have
33 differences in different regions, especially over time.
34
35 We published a paper, the year before last, that detailed a suite
36 of different reef fishes, some of them exploited and some of them
37 not, in the years after Deepwater Horizon, and we documented this
38 decline, using fishery-independent data, that Troy is talking
39 about for red snapper in that region of the north-central Gulf
40 that was both affected by Deepwater Horizon and was also the area
41 in which the lionfish invasion, at its peak, was the highest.
42
43 Dave Chagaris published a paper last year that is an EwE model
44 that tries to tease apart the various fishery versus lionfish
45 versus Deepwater Horizon effects, and so just a reminder that one
46 size doesn't fit all, when talking about these comments, because
47 people are talking about their local experience.
48

1   As far as the UCB discussion, some things that I think we've kind
2   of missed here a little bit is that UCB was really a
3   classification, at the outset of this study, the Great Red Snapper
4   Count study, and there were areas where it was unknown habitat.
5   However, we also had differences in how -- In what UCB meant among
6   the various investigators, and so, in the western Gulf, it was
7   thought more of unconsolidated habitat, and that's where the UCB
8   acronym gets used for two different things, unconsolidated versus
9   unknown.
10
11 Then, in the eastern Gulf, off of Florida, we had areas, and we
12 still have areas, obviously, with very low profile, sparse, natural
13 bottom habitat, things like sponges and soft corals, et cetera,
14 that have low densities of red snapper that, at the outset, was
15 unknown, but now we have a sense of what the habitat is there.
16
17 The last thing about the 10 percent versus 15 percent versus zero
18 percent approaches here to UCB, I think it's important to remember,
19 or to kind of put this in the context of the idea here is being
20 thought of as, well, 10 or 15 percent of the UCB could be fished,
21 but it really could also be thought of as the entire UCB, and we
22 have 10 to 15 percent vulnerability of the population in that
23 habitat, and we're sort of explicitly assuming that there's 100
24 percent vulnerability in the structured habitat, but it's
25 important to remember that the fishery operates in these areas, to
26 some extent, already.
27
28 We just don't know to what extent that is occurring, and so,
29 really, what we're saying here is that the fish in this
30 unconsolidated, or unknown, habitat, or uncharacterized, excuse
31 me, habitat is going to be 10 to 15 percent more vulnerable in
32 these two scenarios.
33
34 To what Sean was talking to before, about only 10 to 15 percent of
35 the uncharacterized bottom becoming vulnerable to fishing, there
36 is already some percentage that is already vulnerable to fishing,
37 but we just don't have an estimate of what that is.
38
39 **CHAIRMAN NANCE:** Thank you, Will. Josh.
40
41 **DR. KILBORN:** Thank you, Mr. Chair. I was wondering, and my
42 apologies if this information has already been presented and I
43 missed it, but could somebody give me some information about what
44 the current OFL and ABC are, or what would happen if we decide
45 that we can't make a decision, and what's the status quo at this
46 point, so that we can use that in reference to the decision that
47 we're trying to make, moving forward?
48

CHAIRMAN NANCE: Off the top of my head, I don't know exactly, and Ryan may know exactly.

MR. RINDONE: Can you repeat that?

CHAIRMAN NANCE: The OFL and ABC, the current.

MR. RINDONE: 15.5 million pounds for the OFL and 15.1 million pounds for the ABC, and the SSC's past recommendation was 25.6 million pounds for the OFL and 15.4 million pounds for the ABC, but that past recommendation, though approved by the council in a reef fish framework action, has not been implemented yet by the agency.

DR. KILBORN: I'm sorry, Ryan, and you were talking fast on that second part. Could you repeat that second part?

MR. RINDONE: The last set of catch advice that was recommended by the SSC recommended 25.6 million pounds for the OFL, based on the Great Red Snapper Count, and 15.4 million pounds for the ABC, but that was based on the NMFS bottom longline survey. Those catch limits were recommended for implementation by the council in a framework action that has yet to be approved by the agency, and so that leaves us with what is currently on the books, which is from SEDAR 52, which is 15.5 million pounds for the OFL and 15.1 million pounds for the ABC.

If you guys recommend a change here, and then the council goes through the motions of doing another framework action to update the catch limits, then that updated catch advice would supersede that which has been submitted already, based on the SSC's last set of recommendations.

DR. KILBORN: So then if we don't do anything right now, it will ultimately be an OFL of 25.6 million?

MR. RINDONE: If it's approved by the agency. If it's not approved, for whatever reason, then no.

DR. KILBORN: Then it goes to 15.5.

MR. RINDONE: But we don't have a position from the agency on that at this point.

DR. KILBORN: Very good. Thank you.

CHAIRMAN NANCE: Okay. Roy.

1   **DR. CRABTREE:** A couple of things. I mean, we have accepted this
2   suite of analyses now as the best scientific information available,
3   and so, to me, it would be somewhat problematic if we stood on the
4   older ABC and OFL, which are based on different analyses, and that
5   would seem to be an inconsistency.
6
7   The agency has had this for a while, and I can tell you, from past
8   experience, one thing that slows the agency down is when they have
9   difficulties reconciling the logic and the rationales provided to
10 them, and that may be some of what is happening here.
11
12 Jim touched on it, and we have, I think, lots of good reasons of
13 why the OFL is coming down now, and that has to do, I think, with
14 putting the random forest analysis back in, using the LGL numbers
15 and using the post-stratified numbers for Florida, and that has
16 resulted in the catch levels coming down.
17
18 The whole issue with the UCB and the percentage of the UCB, that
19 is a tricky one, and, to me, that is getting at the issue of how
20 much localized depletion can you live with, and that is, I think,
21 at least as much a policy decision that the council needs to weigh-
22 in as it is anything else, but I don't think it's one that will
23 fully resolve until after we get through the benchmark, because I
24 think that one will take some time, and it would be hard to make
25 a lot of progress on it, knowing that a lot more information is
26 coming, and so it seems to me, at least for now, going with the
27 ensemble advice is a reasonable way to go. I guess I will try to
28 get us focused and moving, and I will go and offer up a motion,
29 and that would be that --
30
31 **CHAIRMAN NANCE:** Jessica, can you bring up the place where we can
32 put that? All right, Roy. Go ahead.
33
34 **DR. CRABTREE:** All right. **The SSC accepts the Southeast Fisheries**
35 **Science Center catch analysis and establishes an OFL, based on the**
36 **ensemble analysis, a five-year average of 18.91 million pounds.**
37
38 **CHAIRMAN NANCE:** Do we have a second for that motion?
39
40 **DR. MICKLE:** I will second.
41
42 **CHAIRMAN NANCE:** Okay, Paul. Thank you. Josh.
43
44 **DR. KILBORN:** Thank you. Okay, and so, if we use the P* 30 percent
45 model in this ensemble approach, which I should point out is
46 technically not an ensemble model, because we only used one model
47 that was parameterized differently, but, in any case, if we use
48 that model, then what we're -- If I understand it correctly, what

1 we're saying is that this mean value is our OFL, and then the ABC
2 would be the P* 30 percent. Then, if we set --
3
4 **CHAIRMAN NANCE:** Josh, we could choose -- We would choose an ABC
5 after this motion.
6
7 **DR. KILBORN:** Okay. Well, let's say we choose the P* 30.
8
9 **CHAIRMAN NANCE:** Absolutely. Go ahead.
10
11 **DR. KILBORN:** Then, if we also recall that, in only Florida, the
12 2021 quota was exceeded by 13 percent, then what we would actually
13 have coming out of the water is more likely to be 18.5, for the
14 ABC, assuming only Florida overfishes, which gets us very close to
15 that OFL value that we're thinking about right now of 18.9, if
16 it's the 18.5 million.
17
18 Like I said, that's only assuming that Florida overfishes, and no
19 one else does, and then, also, if you look at the standard
20 deviations on these ensemble model values for the mean, they're
21 really high, and 4.96 million pounds in either direction for the
22 OFL is quite a bit, and neither of those P* values are outside of
23 that confidence range, and so I don't know, and I'm a little uneasy
24 with this, although I will say that, given what's under
25 consideration of 25.6 million pounds, this would be better, but I
26 just think that we need to think about the uncertainty involved in
27 this, if we then extend this OFL to an ABC. Thank you.
28
29 **CHAIRMAN NANCE:** Thank you. Roy.
30
31 **DR. CRABTREE:** Just to the motion, I think we should add "pounds
32 whole weight". I appreciate your comment there, but I think this
33 is much a more realistic OFL, where we are, than what's on the
34 books now. It is possible, if the council has big overruns, that
35 they would go over it, and they would then have to address that.
36
37 They have paybacks in place, in terms of the AMs, and so it would
38 be a self-correcting sort of mechanism. Also, we would give an
39 ABC to the council, and they can set the ACL at or below that
40 value, and so, if they want to have bigger buffers, as unlikely as
41 that may seem to us, they could certainly do that.
42
43 I appreciate your concern, and I would point out that,
44 historically, with red snapper, this is a bigger buffer than we
45 have normally had between the ABC and the OFL, and I think what is
46 actually on the books right now, approved by the Fisheries Service,
47 is -- What was it?
48

1 **MR. RINDONE:** 2.51 percent is the difference, and it's 15.5 to
2 15.1 million pounds.
3
4 **DR. CRABTREE:** So that's a much smaller buffer, actually, than the
5 one we have here.
6
7 **CHAIRMAN NANCE:** Thank you. Any other discussion on the motion?
8 Jason.
9
10 **MR. ADRIANCE:** Thank you, Mr. Chair. I just want to say that I
11 will oppose this motion, just given the discussions we've had about
12 the ensemble. Thank you.
13
14 **CHAIRMAN NANCE:** Okay. Do you have a substitute motion, Jason?
15
16 **MR. ADRIANCE:** Not at this time, Mr. Chair.
17
18 **CHAIRMAN NANCE:** Okay. Thank you. Any other discussion on this
19 particular motion? Sean.
20
21 **DR. POWERS:** I just want to echo what Jason said, and I just think
22 that the 8 percent that this represents of the UCB isn't supported
23 by the Gardner analysis, and I know that John didn't -- I mean, I
24 am not putting a number in John Walter's head, but it seems very
25 low to go with the 8 percent UCB, and I realize it is an increase
26 in the OFL, and Roy brings up an interesting point, that, if we do
27 raise it, there will be probably more localized depletion issues,
28 and, you know, I never thought about it as a policy decision, but
29 I think Roy is right.
30
31 I mean, how much appetite the -- How much localized depletion we
32 take can meet the overall goals of the stock is probably more
33 likely a policy decision, but, again, just echoing Jason's comment
34 that I think this represents only 8 percent UCB, and that's not
35 supported by the analyses that we saw.
36
37 **CHAIRMAN NANCE:** Okay. Thank you. Doug.
38
39 **MR. GREGORY:** I guess this is my time to battle with Sean, and I
40 will never forgive him for that time in 2012 when he stole my
41 motion, but that's a different story. The 8 percent, 10 percent,
42 15 percent, those were not the result of determined calculations.
43 Those were just guidelines, estimates, guesses, and so it's
44 irrelevant to the actual argument of the motion as to which percent
45 of unconsolidated bottom we're going to choose for this analysis.
46
47 I will point out, again, that we have no idea how this is going to
48 disrupt our standard rebuilding program that's been in place for

272

1 probably about thirty years, and so we've really got a high-risk
2 effort going here that people need to remember, and, again, the
3 Great Red Snapper Count is one data point in a thirty-year history
4 of managing this fishery. Thank you.
5
6 **CHAIRMAN NANCE:** Thank you, Doug. Harry.
7
8 **MR. BLANCHET:** Thank you. To the point of what value of UCB -- If
9 I recall correctly, that was derived from the estimates of the
10 random forest model, and is that -- Am I wrong in that? I mean,
11 that was a basis for those numbers, and so I think that, if
12 necessary, to go back and review the basis of that number, it might
13 be appropriate, if somebody has got a problem with that specific
14 value.
15
16 I agree with Jason that using 8 percent is probably low, but the
17 other part of that OFL, and we had some discussion yesterday and
18 discussing about what the state managers thought about various and
19 sundry pieces of biomass and exploitation rate across the Gulf,
20 and one of the -- One of many elephants in the room is the large
21 amount of biomass seemingly unexploited, or relatively
22 unexploited, in the Big Bend of Florida.
23
24 To me, that is really one of the big uncertainties that drives
25 both the overall estimate of red snapper in the Gulf of Mexico and
26 all of the values derived from that, and, as several people
27 commented in the public comment period, there is not a whole lot
28 of places, especially handy to civilization, that don't have
29 exploited red snapper, if you can find them, and, with the natural
30 bottom off of Florida, that's different than some of the cryptic
31 biomass scattered in little pockets across mud bottom in Louisiana.
32
33 It's a lot better characterized, and I think a lot more -- I will
34 say available for utility than those little pockets that we see,
35 and so those are the issues that I have, is one is on the -- How
36 we derive those estimates of UCB, and the other is really a
37 question to throw back at Luiz regarding his comfort level on that
38 estimate of -- I forget what the value would be, and I don't know
39 if it was even -- If I added it up right, it's like thirty-six
40 million pounds of red snapper in that northwest Florida area, and
41 that's over a third of our total, and it seems remarkable that
42 that is not exploited more than it is.
43
44 **CHAIRMAN NANCE:** Thank you, Harry. Those are fish and not pounds,
45 but we get your point, for sure. Trevor.
46
47 **MR. MONCRIEF:** Thanks, Mr. Chair, and I was going to bring up --
48 I had the same kind of concerns that Doug was bringing up, and

1 that's why I asked the question yesterday about, on that fourth
2 objective that was listed in the Gardner analysis of whether the
3 10 to 15 percent was supported by the empirical data, and I think
4 the answer that I got was that, while there are caveats, it is
5 supported empirically, but it's not empirically derived directly.
6 I feel like that 10 to 15 percent wasn't just out of nowhere, and
7 I understand it's a round number, but if it had empirical support.
8
9 **CHAIRMAN NANCE:** Thank you, Trevor. Sean.
10
11 **DR. POWERS:** Trevor touched on one of my points that I wanted to
12 counter Doug on, is those numbers are supported. Obviously, the
13 extent of the UCB is just a GIS calculation. What percent of that
14 is likely exploited, I think the Gardner analysis justifies those
15 10 or 15 percent scenarios, but remember that the other way to
16 think about that percentage is that, if 15 percent is exploited,
17 that means that 85 percent is not.
18
19 That is a large buffer in spawning stock in that uncharacterized
20 bottom, and so I don't think that we're not proceeding with caution
21 if we use a higher UCB, and we recognize that a large portion of
22 that uncharacterized bottom biomass is not exploited, and so it
23 does serve as a buffer for our decisions. Thanks.
24
25 **CHAIRMAN NANCE:** Thank you. From my perspective, I liked the
26 ensemble when it was presented yesterday, and I think it gives us
27 a -- It's an average drawn from data, and it goes all the way from
28 thirty-five to -- The draw is all the way from thirty-five million
29 pounds of landings down to five million pounds, and so it certainly
30 is a broad spec, with the average being around eighteen, and so I
31 am comfortable with the logic in it.
32
33 While it gives us, I think, an average of the uncharacterized
34 bottom usage, it's hard for me to choose between all structure
35 without, and I know there is some out there, and so how much -- We
36 can go with 10 percent or 15 percent, or we can do an average, and
37 so, from my perspective, I am comfortable with what we're basing
38 it on here. Any other discussion? David, please.
39
40 **DR. CHAGARIS:** I mean, just to add to the discussion a little bit,
41 I mean, we think about this population on the unconsolidated bottom
42 as if it's completely independent of the populations that exist on
43 structures, but it's likely that, as you draw down the populations
44 on the structures, that it would actually draw fish in from the
45 unconsolidated bottom, and I don't think we know a lot about that,
46 because, as far as I know, nobody has tagged fish on the
47 unconsolidated bottom, because it really wouldn't be an efficient
48 thing to do, but it's just something to keep in mind, that these

1 populations aren't separate from one another. You could be locally
2 depleting a structure site, but also partially depleting the
3 unconsolidated population in the vicinity of that, and so I just
4 wanted to have folks keep that in mind. Thank you.
5
6 **CHAIRMAN NANCE:** David, thank you. Steven, please.
7
8 **DR. SCYPHERS:** Thank you, Mr. Chair. Just kind of a quick question,
9 for clarification, and so I understand the benefits of averaging
10 the different UCB scenarios, but I was curious about the thoughts
11 on including the zero, because it seems like, when we talked about
12 this last March, we didn't discuss the zero that much, and we kind
13 of focused on the other numbers, all the way up to 22, I believe,
14 but, if we average the 8 and the 15, that, I believe, would be
15 right around 13, where we were last time as well. I guess that's
16 what I am still trying to understand, is the rationalization of
17 that number. Thank you.
18
19 **CHAIRMAN NANCE:**   I think it's the average of 10 and 15, and so we
20 haven't -- Throughout the document, we have all structure, without
21 any landings or without any from the uncharacterized bottom, and
22 then we have a scenario with all structure plus 10 percent, all
23 structure plus 15 percent, and so simply what this other one is
24 doing is we're not choosing a 10 or a 15, but we're using an
25 average of those, and I can't remember what Matt said yesterday
26 that it would be, but I think 13 percent, around there, would be
27 the average between those, and so the ensemble advice is from an
28 all structure with around a 13 percent, 12 to 13 percent, from the
29 uncharacterized bottom, and so it simply gives us an average, and
30 we're not having to choose between 10 and 15 in our debate. Trevor.
31
32 **MR. MONCRIEF:** I had the same kind of thoughts as what Steven just
33 brought up, and I think the question still remains of, to my
34 knowledge, it was the all structure, 10, and 15 that was being
35 averaged and not between the 10 and 15 alone, and, given the
36 conversation we've been having, I am wondering if that might be a
37 realistic option here, to try to balance, and I will support
38 Steven's question and his thought process there.
39
40 **CHAIRMAN NANCE:** Okay. Matt, can you address that question?
41
42 **MR. SMITH:** Sure. Thank you, Chair. The current ensemble does
43 include the all structure, and so it's an average of the results
44 from essentially zero UCB, 10 percent, and 15 percent, and so it's
45 going to wind up somewhere below 10 percent, probably, in terms of
46 what it's accurately characterizing for UCB.
47
48 I can do an ensemble between just the 10 and 15, and I can do runs

1 at any other UCB that the SSC would like, and I know we're into
2 the third day, and decisions are being made, and maybe the time to
3 do this was last night, but, if there's something you want to see,
4 the turnaround is relatively quick to get those done, but the
5 current ensemble that you're looking at is going to be probably in
6 the 8 percent range, more so than the 13 percent range, because it
7 does include the zero UCB estimates.
8
9 **CHAIRMAN NANCE:** Thank you. If we do any more runs, I will have
10 to apologize to Shannon, because I told her, last night, that we
11 weren't going to ask for any, but, anyway, thanks, and I appreciate
12 that option, Matt. Jason.
13
14 **MR. ADRIANCE:** Thank you. Between Trevor and Matt, my issues were
15 addressed. Thanks.
16
17 **CHAIRMAN NANCE:** Thank you. Any other discussion on this motion?
18 Steven.
19
20 **DR. SAUL:** Thank you, Mr. Chair. I just emailed over a potential
21 clarifying sentence, but I can just read it, probably easier, but
22 I don't know if folks want to, as a friendly amendment, add, to
23 this motion, something to the effect that fishing on additional
24 uncharacterized bottom will indicate, or mean, that the stock is
25 most likely to collapse, but that removing the ABC will probably
26 lead to additional localized depletion, and so I don't know if
27 want some caveat in there that indicates that localized depletion
28 may occur and may impact the ABC recommendations.
29
30 **CHAIRMAN NANCE:** Thank you. Ryan, to that point?
31
32 **MR. RINDONE:** Thank you, Mr. Chair. Just a point of order on this,
33 for Steven, and this would be a good statement, or a
34 recommendation, for the SSC to give, if the SSC agrees with this
35 statement, and I think it's a separate motion, as opposed to
36 something that's included in this particular motion, because this
37 could be applied to numerous different combinations of OFL and ABC
38 recommendations, and so it is a little bit more generalized.
39
40 I think, if the SSC wanted to make this recommendation to the
41 council, it would be most appropriate that it's done as a separate
42 motion, and then you guys can vote on that, or not, and the council
43 can take that advice from the SSC as that, as general advice that
44 would apply, regardless of what the recommended OFL and ABC values
45 are.
46
47 **DR. SAUL:** Yes, that would be fine, Ryan. Thanks.
48

1 **CHAIRMAN NANCE:** Okay. Let's go ahead and -- Matt, did you have
2 a comment? Go ahead, please.
3
4 **MR. SMITH:** Just a quick thought, and thank you, Chair. If people
5 are still thinking about additional runs, I just wanted to
6 reemphasize that the main advantage of the ensemble model is that
7 it gives you wider tails on the distribution, and so, if you go
8 ahead and apply a P*-type approach, you get a little bit more space
9 than you do from the individual run, and I think it was brought up
10 yesterday that, if that's the concern, or if that's the attraction,
11 to the ensemble, that there are other avenues available to the SSC
12 to get more space from the OFL to the ABC, and we don't necessarily
13 have to rely on the P* approach.
14
15 It was a tact we took, because it was something that was familiar
16 to the group, and we thought it could gain some traction, but, if
17 they're really struggling about the ensemble, we could get the
18 same mean result from just a straight-up 13 percent run, or a 15
19 percent, or whatever it is that the SSC likes, and other avenues
20 could be taken to increase that buffer to the ABC, and that's it.
21 Thank you for the time.
22
23 **CHAIRMAN NANCE:** Thank you, and so at least we have that option,
24 depending on what happens here. Let's go ahead and take a vote on
25 this motion. I am going to read it. **The SSC accepts the Southeast
26 Fisheries Science Center catch analysis and establishes an OFL
27 based on the ensemble analysis using the five-year average of 18.91
28 million pounds whole weight.** Let's go ahead and do a roll call.
29
30 **MS. MATOS:** Jim Tolan.
31
32 **DR. TOLAN:** Yes.
33
34 **MS. MATOS:** Sean Powers.
35
36 **DR. POWERS:** No.
37
38 **MS. MATOS:** Trevor Moncrief.
39
40 **MR. MONCRIEF:** No.
41
42 **MS. MATOS:** Doug Gregory.
43
44 **MR. GREGORY:** A cautious yes.
45
46 **MS. MATOS:** Dave Chagaris.
47
48 **DR. CHAGARIS:** Yes.

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 1
 2  MS. MATOS:  Lee Anderson.
 3
 4  DR. ANDERSON:  Abstain.
 5
 6  MS. MATOS:  John Mareska.
 7
 8  MR. MARESKA:  No.
 9
10  MS. MATOS:  Jack Isaacs.
11
12  DR. ISAACS:  Yes.
13
14  MS. MATOS:  Steven Saul.
15
16  DR. SAUL:  No.
17
18  MS. MATOS:  Luke Fairbanks.
19
20  DR. FAIRBANKS:  Yes.
21
22  MS. MATOS:  Jason Adriance.
23
24  MR. ADRIANCE:  No.
25
26  MS. MATOS:  Harry Blanchet.
27
28  MR. BLANCHET:  No.
29
30  MS. MATOS:  Benny Gallaway.
31
32  DR. GALLAWAY:  Yes.
33
34  MS. MATOS:  Paul Mickle.
35
36  DR. MICKLE:  Yes.
37
38  MS. MATOS:  Will Patterson.
39
40  DR. PATTERSON:  Abstain.
41
42  MS. MATOS:  Rich Woodward.
43
44  DR. WOODWARD:  Abstain.
45
46  MS. MATOS:  Steven Scyphers.
47
48  DR. SCYPHERS:  No.
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1
2   **MS. MATOS:** Jim Nance.
3
4   **CHAIRMAN NANCE:** Yes.
5
6   **MS. MATOS:** David Griffith.
7
8   **DR. GRIFFITH:** Yes.
9
10 **MS. MATOS:** Roy Crabtree.
11
12 **DR. CRABTREE:** Yes.
13
14 **MS. MATOS:** Luiz Barbieri.
15
16 **DR. BARBIERI:** No.
17
18 **MS. MATOS:** Michael Allen.
19
20 **DR. ALLEN:** Yes.
21
22 **MS. MATOS:** Cindy Grace-McCaskey.
23
24 **DR. GRACE-MCCASKEY:** Yes.
25
26 **MS. MATOS:** Josh Kilborn.
27
28 **DR. KILBORN:** No thank you.
29
30 **CHAIRMAN NANCE:** Thank you. **It looks like the motion carries**
31 **twelve to nine with three abstentions.** Okay, and so we have --
32 Anyway, it's one of those deals that I know each of us have our
33 rationale on our votes, and, from a science perspective, how
34 comfortable we are with different things. I appreciate though the
35 SSC and its willingness to move forward on these items.
36
37 With an established OFL, or, excuse me, a recommended OFL, of
38 18.94, let's entertain the ABC for our recommendation. We have a
39 P* in our document, and we have a P* of 0.4 and a P* of 0.3. If
40 we used the same five-year average, that would give us a -- For
41 the 0.4, it would give us a 17.5-million-pound ABC, and a P* of
42 0.3 would give us an ABC of 16.31 million pounds, and so do we
43 have a motion, or we can have discussion first and then a motion.
44 Roy.
45
46 **DR. CRABTREE:** I will kick off the discussion, and so I think, in
47 the past, we have used 40 percent P* for red snapper, and I believe
48 Ryan told us yesterday that's what was used after SEDAR 52, and so

1 that would be an argument for 17.65, but we've all discussed, in
2 this case, that there are additional uncertainties.
3
4 In SEDAR 52, we had a full assessment, and we don't have that now,
5 and we have a catch level analysis from the Center, and there's a
6 lot of new data in it, and there's a lot of fish in the UCB that
7 we've talked about quite a bit, and that's probably the most
8 uncertain estimate that we have, and so a way to gauge how much
9 should we reduce from 17.65 to address this uncertainty would be
10 to look at 30 percent P*, and that's one way to get at it that I
11 think is calculated, and I think you could pull something in
12 between the two numbers, if you wanted to, but that's the way I'm
13 thinking about it.
14
15 We would normally use 40 percent, but this isn't a normal type of
16 analysis and situation that we normally are in, and we have
17 concerns about localized depletion in certain areas, and we have
18 concerns about the trends we've seen in the longline index, and
19 we've heard concerns voiced by fishermen, and so I think going to
20 closer to P* 30 percent is a way to incorporate that into our ABC
21 advice.
22
23 **CHAIRMAN NANCE:** Thank you, Roy. Josh.
24
25 **DR. KILBORN:** Thank you, and I guess I want to echo some of what
26 Roy just said, but, in particular, the fact that the bottom
27 longline and the people on the water are telling us that things
28 aren't as rosy as we are perceiving them to be, given this higher
29 estimate of total abundance, and so I definitely think that we
30 need to put a lot of weight into that.
31
32 Then, also, like I said before, bear in mind that the standard
33 deviations are pretty high on these models, and so, if we look at
34 the mean of 18.9, minus the standard deviation value, we're looking
35 at about 13.95 million pounds, and then the P* 30 percent of 16.3,
36 and so, in my opinion, I feel like we should be somewhere between
37 fourteen and sixteen million pounds, if we're going to be setting
38 an ABC, given the amount of uncertainty that we have throughout
39 all of this stuff. That's my take. Thank you.
40
41 **CHAIRMAN NANCE:** Thank you, Josh. Benny.
42
43 **DR. GALLAWAY:** I want to point out that my contacts in the Texas
44 fisheries, mainly commercial and charter, suggest that, likewise
45 in Texas, that there are localized areas of depletion and changes
46 in length, or smaller fish, and some of them further characterize
47 the localized depletions as being large localized depletions, and
48 so I think caution is recommended on setting the limits here.

1 Thanks.
2
3 **CHAIRMAN NANCE:** Thank you. Jim.
4
5 **DR. TOLAN:** Thank you, Mr. Chairman. I will touch on something
6 that Roy just said, in that we're kind of coming at this ABC and
7 OFL in a little bit different direction, and so we're kind of maybe
8 in uncharted waters, but the question that I have is, is this
9 setting the ABC at 75 percent of the OFL on the table, and that's
10 a quick calculation of 14.18, which is kind of the area that Josh
11 was talking about. Thank you.
12
13 **CHAIRMAN NANCE:** Thank you, Jim. Josh.
14
15 **DR. KILBORN:** I wanted to maybe see if we could have a little bit
16 of a conversation about the fact that we heard, several times now,
17 that the size distribution is changing and trending down, right,
18 and, to me, that's a big red flag, that we should not be considering
19 increases in quotas at all, frankly, but am I the only one that
20 has that concern? We've heard this several times over the past
21 couple of days, that people are witnessing this change in the size
22 distribution.
23
24 As we heard before, the size distribution, and the age
25 distribution, has a pretty significant effect on these models that
26 we're considering, and so, again, I think that's a big red flag,
27 and I'm just curious how other people feel about that as well.
28
29 **CHAIRMAN NANCE:** Josh, thank you. Luiz.
30
31 **DR. BARBIERI:** Thank you, Mr. Chairman. I mean, just in the
32 interest of adding perspective to this discussion, and I was not
33 going to do this, because I felt some of this discussion seems to
34 be stepping too outside of the realm of science, explicitly, and
35 just going into more policy-related issues, like local depletion,
36 but I just emailed, I guess Jessica, an email that I got that is
37 information from the Science Center that shows a time series of
38 the bottom longline survey broken down by east versus west over
39 the last I guess it's ten years or so. That's it. Thank you,
40 Jessica.
41
42 Again, not to step too far into management issues here, but this
43 is something that I think just points out the fact that going
44 forward with this recommendation, again, and I said this yesterday,
45 and so I am repeating myself, but just to emphasize that we're
46 going to have to keep our finger on the pulse of what is going on
47 there, because, at least as the eastern Gulf is concerned, things
48 are not looking too well, and maybe -- I don't know what the sample

1 sizes are here, and I don't know what, really, the main caveats
2 associated with the survey are, but, when you think about it, the
3 bottom longline survey has been an anchor for us in trying to get
4 a health check on what's going on with a lot of these reef fish
5 stocks.
6
7 We use it often for red grouper, and I believe gag as well, and
8 definitely for red snapper over the years, and surveys have some
9 degree of error associated with them, and so we're not taking this
10 as gospel, but I think it does raise a red flag, and I think this
11 is a point that Roy made earlier, about the need to just keep an
12 eye on what's going on here, so the council is aware that there
13 may be some issues here in parts of the Gulf that are going to be
14 potentially impactful.
15
16 **CHAIRMAN NANCE:** Thank you. Tom.
17
18 **DR. FRAZER:**   Luiz, I think I want to kind of drill into your
19 comments a little bit, because the bottom longline survey is
20 comprised of a large number of stations, right, throughout the
21 Gulf, and, when we look at the index value, we get focused on a
22 mean value, or some measure of central tendency there, and what I
23 don't know is can we get an idea, for example, if the catches in
24 the survey are reflective of the observations that we're seeing on
25 the water.
26
27 For example, are the catches in the northern Gulf lower, right,
28 and so I don't have any -- When I look this figure on the board,
29 I am not seeing any measure of dispersion, right, and so one of
30 the things that you would expect, if you have localized depletion,
31 is an increase in your variance here, and that would be helpful,
32 and so, from a council perspective, I am trying to figure out what
33 are the metrics that you would be looking for, right, if you make
34 an adjustment in both the OFL and the ABC, that suggests that we
35 need to move backwards, and so that's what I am hoping to get from
36 the SSC.
37
38 **DR. BARBIERI:** Briefly, to that point?
39
40 **CHAIRMAN NANCE:** Yes, please.
41
42 **DR. BARBIERI:** Thank you, Tom, because that's spot-on, and I agree,
43 and I was lazy here, and I got the Excel files that came with this,
44 and the confidence intervals, and I just -- I was not going to
45 bring this issue up, because I didn't want to delve too far into
46 an area that can be perceived as intruding into management issues
47 that are too explicit to that point, and so I didn't put those
48 confidence intervals in there, but I would imagine that the Center

1   has this information, and that the standardized index is developed.
2
3   I mean, we see this index on a regular basis, and my point is also
4   that, unless we're going to be having periodic Great Red Snapper
5   Counts, going into the future, and that might be the case, right,
6   and, unless that is the case, we're going to have to rely on the
7   long-term monitoring programs that our Science Center has been
8   conducting for decades and that really provide the guidance to us,
9   and that are explicitly described in our interim analysis process,
10 that paper that Center folks wrote, and I guess with some co-
11 authors at the national level from the Fisheries Service, but those
12 are the procedures that we use to have those health checks, similar
13 to what we just saw, and I think it was Katie who presented for
14 Skyler.
15
16 I am thinking of the bottom longline, given everything that you
17 pointed out that we're going to have to assess what the uncertainty
18 of these estimates and what the trends are and how much confidence
19 can we have on these trends, but I don't see -- I would welcome
20 input from the Science Center folks who are listening to help us
21 identify what would be the long-term data collection program,
22 fishery-independent, that we're going to be using to keep our
23 finger on the pulse of this population as we look forward.
24
25 **CHAIRMAN NANCE:** Roy.
26
27 **DR. CRABTREE:** Well, I am glad you -- I am really kind of glad
28 that you put this up. If you look at the eastern Gulf, it is
29 worrisome, and you see this real abrupt drop in 2017. Well, that
30 is the year that Secretary Ross extended the red snapper season,
31 really without rationale, and then, starting in 2018, and I'm
32 retired, and so -- Starting in 2018, the EFPs were issued for state
33 management, and you can see the indexes remained low.
34
35 Now, the council has approved -- You know, the issue of the state
36 surveys and the calibration of the state surveys to a common
37 currency has been one that everyone is aware of, and we've talked
38 about it a lot, and the council did submit an amendment to the
39 Fisheries Service that I believe would introduce calibrations to
40 a common currency, effective at the beginning of the 2023 season,
41 and I don't know that the Fisheries Service has approved that yet
42 or not, but, assuming that is put in place, I think that will
43 address a number of the issues with respect to the state surveys
44 that may be -- I mean, I don't know why that index goes down in
45 2017, but it could be coincidental that that's when these things
46 happened, but it also could be that it's elevated recreational
47 fishing mortality that has driven it down, and so the calibration,
48 I think, is a very important way to address some of those issues,

1 and so that may address some of this, but I completely agree, Luiz,
2 that we want to keep an eye on this and keep the council attuned
3 to what's going on.
4
5 **CHAIRMAN NANCE:** Thank you. Katie, to that point?
6
7 **DR. SIEGFRIED:** Thank you, Chair. I just wanted to comment on
8 what Luiz originally brought up, as far as which indices would
9 potentially be used to monitor the health of the stock, and, at
10 this point, we really have a suite of options, and, during the
11 research track, we'll be able to take a better look at the combined
12 video, and we're hoping, through the Procedural Workshop 8 that
13 SEDAR is coordinating, we'll have a better idea of how to combine
14 the three video surveys in the Gulf to -- One of the specific goals
15 is to give us an index for red snapper. With that, the bottom
16 longline, the trawl, and larval surveys, we would have sort of a
17 suite of options to keep an eye on the health of the stock.
18
19 **CHAIRMAN NANCE:** Luiz, to that point?
20
21 **DR. BARBIERI:** Thank you so much, Katie. I mean, that's exactly
22 the type of information that we are looking for, because having
23 more than one survey, or data source, information, to look at, the
24 better for us to keep an eye on this, and so I appreciate that,
25 Katie. Thank you.
26
27 **CHAIRMAN NANCE:** Ryan, to that point?
28
29 **MR. RINDONE:** Thank you, Mr. Chair, and I guess all is fair in
30 love and war and making sure you guys have all the information in
31 front of you, and I will remind you guys that the other index that
32 you looked at the last time was the standardized CPUE index for
33 the video surveys that Katie was talking about.
34
35 This is SEDAR 74 Stock ID Document Number 3, and, just so that you
36 -- You guys can look through that, just like you're looking through
37 this other information that you considered at the January meeting,
38 and you do have some, at least in terms of trends, conflicting
39 signals between the video surveys and the NMFS bottom longline
40 survey for the eastern Gulf. Of course, the NMFS bottom longline
41 survey doesn't look all that swell, and the video index though
42 paints a little bit of a different picture, and so it's also worth
43 noting the differences in the selectivities of these different
44 gears.
45
46 The bottom longline survey is typically going to select for larger,
47 older fish than the video surveys, or than the combined video
48 survey, on average, and the Panama City operates in a little bit

1 shallower water, and it gets a little bit younger, smaller fish
2 than the Pascagoula Lab survey, which operates along the deeper
3 water with a little bit older, larger fish. Then the FWRI survey
4 operates across those depth zones, and so it gets a little bit
5 more of the full gamut, and so just kind of an FYI that that
6 information is also in the January SSC archived materials.
7
8 **CHAIRMAN NANCE:** Thank you, Ryan. Katie, to that point?
9
10 **DR. SIEGFRIED:** (Dr. Siegfried's comment is not audible on the
11 recording.)
12
13 **MR. RINDONE:** Katie, we can't hear you.
14
15 **DR. SIEGFRIED:** Can you hear me better now?
16
17 **CHAIRMAN NANCE:** Yes, we can.
18
19 **DR. SIEGFRIED:** I don't know if anybody else has trouble with
20 Bluetooth like I do. You've got to just stick with the cord.
21 Anyway, sorry about that. What I was going to say is thanks to
22 Ryan for pointing out that the selectivity differences exist across
23 these indices, and that's actually why we would want to look at
24 the suite.
25
26 The other thing to note is that the combined video wasn't used in
27 SEDAR 52, which is why it wasn't on the list for interims at this
28 point. However, like I said, that SEDAR procedural workshop is
29 specifically designed to take a look at how we can get the combined
30 video together for SEDAR 74.
31
32 Then the other point that I wanted to make is that the stock ID
33 that has been finalized actually will allow us to keep a great eye
34 on things like if the central zone, the central zone of the Gulf,
35 actually takes quite a hit. If there is an increased exploitation,
36 we'll be able to detect that in those specific indices, and so I
37 think we really have a good suite of options to monitor the health
38 of the stock.
39
40 **CHAIRMAN NANCE:** Thank you, Katie. I appreciate all that
41 discussion. Will. Thanks for your patience.
42
43 **DR. PATTERSON:** Thanks, Mr. Chair. I'm glad that Luiz presented
44 these updated indices, especially broken out by region. I think
45 one thing that's important to remember here is that, in the
46 standardization, these are scaled, and so they appear to show a
47 common scale between the east and the west, but the magnitude of
48 the catch in the longline survey is much greater in the west, and

1 the age composition of the population in the western Gulf is
2 estimated to have a lot more larger, older fish in it than in the
3 east.
4
5 If these weren't actually scaled to the median, or scaled to one
6 here, and shown in just the CPUE data, standardized by the factors
7 in the model, the east would be almost a flat line compared to the
8 west, given the magnitude of the catch in the survey.
9
10 The second thing is folks have talked about the selectivity here,
11 and I believe, and I could be mistaken here, but I believe the age
12 at full selectivity is estimated to be eight, and so, if you have
13 this drop in 2017 that shows up in the east, this actually matches
14 the data that I was talking about earlier and that we published
15 about declines in the eastern Gulf since Deepwater Horizon in 2010
16 in the north central Gulf, where the predominant catches in the
17 bottom longline survey come from in the eastern half of the Gulf
18 of Mexico.
19
20 As those fish, as those age classes, would be recruiting to this
21 gear, that's about when you see this decline, and 2010 is also
22 when lionfish first show up in the system and, on study sites that
23 we've been monitoring, we see a negative correlation between
24 lionfish abundance and red snapper, likely due to competitive
25 interactions that Dave Chagaris's model as elucidated.
26
27 The last thing is I thought that Josh made an important point
28 earlier about people indicating small red snapper being abundant
29 in places and that one potential reason for that could be that you
30 have a truncated age distribution, and larger fish are missing,
31 but another explanation could be recent strong recruitment, and,
32 in these reefs in the north-central Gulf, and so from off of
33 Alabama to east of Destin, that we've been studying for quite a
34 while, we actually see, in the past two years, more small, young
35 fish showing up, and that appears to be a recruitment pulse, and
36 then, obviously, in the eastern Gulf of Mexico, folks have been
37 reporting this as well, south of San Blas.
38
39 I think we have to be careful when interpreting those types of
40 anecdotal reports, because it could be explained by recruitment as
41 well as missing older fish.
42
43 **CHAIRMAN NANCE:** Thank you, Will. Benny.
44
45 **DR. GALLAWAY:** A question for Roy. How large was that increase in
46 fishing mortality in Florida that corresponded to the decline,
47 which hasn't really come back yet? Was that a very large increase
48 in fishing mortality?

1
2 **DR. CRABTREE:** I don't recall any of the specifics, and I know, in
3 2017, I believe that the season was set to be three days,
4 initially, and then the Secretary extended it to I don't remember
5 how many, but it was in the forty-day ballpark, and it was a
6 substantial increase.
7
8 Then, when the EFPs went in place in 2018, we started monitoring
9 based on the state surveys, and that interjected the whole
10 calibration issue, in terms of how the catches are comparable to
11 the assessment, and so I can't answer the specifics of that, Benny,
12 but I know that there is a lot of reason to believe that the Fs
13 went up beginning in 2017, but, as I said, whether that's driving
14 this, or it's something more recruitment related, I don't know.
15
16 **DR. GALLAWAY:** Thank you.
17
18 **CHAIRMAN NANCE:** Thank you. Doug.
19
20 **MR. GREGORY:** Thank you, Mr. Chair. I also appreciate these graphs
21 and what Will was saying about the studies they did with the oil
22 spill and lionfish, and I have to note that the Great Red Snapper
23 Count was done in 2019, and it shows a larger abundance of fish in
24 the eastern Gulf than in the western Gulf, which is contradictory
25 to what this bottom longline survey is showing.
26
27 It's got to cause one to want to be more cautious about taking a
28 risk of relying on the Great Red Snapper Count as a true index, or
29 a true indication, of abundance, or as an indication of the true
30 abundance that is in the eastern and western Gulf. I would much
31 rather rely on a survey that is ten or fifteen years old than one
32 data point. Thank you.
33
34 **CHAIRMAN NANCE:** Thank you, Doug. Luiz.
35
36 **DR. BARBIERI:** Thank you, Mr. Chairman, and, just briefly, because
37 I see that Adam Pollack is actually listening to this, and I don't
38 know, Adam, if you are able to speak, in terms of getting your mic
39 set, but that's nice, to have the uncertainty associated with that
40 index, but another point that I thought would be interesting for
41 us to think about, and, again, we're just thinking through a lot
42 of these issues and doing what we as SSC members often do,
43 invariably, in every meeting, is questioning things, asking
44 questions, and trying to address all the uncertainties that may be
45 in this whole discussion.
46
47 Another issue that worries me a little bit about that bottom
48 longline index, and the difference between east and west, is that,

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1 as far as I understand it, even though we have other indices, the
2 bottom longline is really set on that uncharacterized bottom, UCB,
3 and that large biomass of UCB fish there don't seem to be holding
4 higher abundance, if we believe in the trends of the survey, right,
5 as expected, because we would expect that that area of the Gulf is
6 not being very heavily fished and targeted by different fishing
7 fleets, right, and so, to me, this index gives us some idea of how
8 things are going in the UCB.

10 I am surprised to see that, despite the large abundance predicted
11 to exist in the UCB area of red snapper, that the area seems to be
12 showing signs of lower abundance that could be indicative of
13 depletion on the eastern side of the Gulf.

15 **CHAIRMAN NANCE:** Thank you, Luiz. Carrie, to that point?

17 **EXECUTIVE DIRECTOR SIMMONS:** Yes, and thank you, Mr. Chair. I was
18 just wondering if perhaps the Science Center could comment on the
19 percentage of UCB they thought was sampled from the NFMS bottom
20 longline survey. I believe I've asked this question before, and
21 I think it's around 11 percent Gulf-wide, and so, if they could
22 comment on that, that would be good.

24 The other thing to keep in mind is this is a long-term monitoring
25 trend tool that we have, but it is not the best gear to catch red
26 snapper, and we all know that, and, if you take a look at the
27 Gardner et al. paper that John Walter just presented yesterday, it
28 was removed from the exploitation analysis, because it's not the
29 best gear for catching red snapper.

31 It is a very good gear, very efficient, for catching red grouper,
32 right, and so I do think we need to keep those types of things in
33 mind, and, also, in the eastern Gulf, recall there is a lot more
34 hard bottom, which makes it that much more difficult when they're
35 sampling that area with this type of gear. Thank you.

37 **CHAIRMAN NANCE:** Thank you, Carrie. Mike Allen.

39 **DR. ALLEN:** Thank you, Mr. Chair. I just wanted to add a general
40 comment that I think these long-term indices are, of course, going
41 to be critically important, moving forward, but, when trying to
42 interpret what they mean relative to the Great Red Snapper Count,
43 I think it's important to think about the habitats and the spatial
44 coverage of these indices, and that was one of my questions that
45 has been discussed, to some degree, is how much of the bottom
46 longline survey is done in the UCB habitat, and, for the other
47 indices, I think that's good to keep in mind, because it may be a
48 way to put these long-standing indices in reference, or at least

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1 in some interpretation, with the Great Red Snapper Count, and so
2 I think that's something important to keep in mind.
3
4
5 **CHAIRMAN NANCE:** Thank you, Mike. John probably has a -- To
6 address Carrie's question, and so John Walter, please.
7
8 **DR. WALTER:** Thanks, and good morning, everyone. I wanted to just
9 reiterate that the Center does use a portfolio of surveys for red
10 snapper, to evaluate its status and its abundance and the age and
11 length composition, but what we're seeing here is the bottom
12 longline, which really has influence over all of the
13 unconsolidated, or uncharacterized, bottom. There is few
14 exclusion points for it, which are like oil platforms or no-passage
15 areas or like sanctuaries, but it actually does specifically hit
16 the entire UCB, and so that's one of the reasons that it does have
17 influence over that, because it's not on a lot of the -- It doesn't
18 specifically hit the known structures that are part of where the
19 Great Red Snapper Count had separated the known structures,
20 platforms, and artificial and natural structures, and so it covers
21 it all. Thanks.
22
23 **CHAIRMAN NANCE:** John, thank you very much. Jason.
24
25 **MR. ADRIANCE:** Thank you, Mr. Chair, and Carrie -- To Luiz's point,
26 and Carrie touched on it, and I see that Will is behind me, and I
27 was just going to mention that, given what we heard about the
28 selectivity of that bottom longline, and I think, from what the
29 Great Red Snapper Count saw in Florida, as far as -- I think the
30 two are very different, and I would let Will probably comment on
31 that, given the disparity seen there, as to what they saw and what
32 that bottom longline may be picking up, but I do understand, and,
33 obviously, there is a drop in that, but I think -- Well, we almost
34 might be talking apples and oranges. Thanks.
35
36 **CHAIRMAN NANCE:** Thank you, Jason. Will.
37
38 **DR. PATTERSON:** Thanks, Mr. Chair. I wonder if we can scroll down,
39 and I don't know if the figures here that Adam sent have it broken
40 out by east and west, or is it just the Gulf-wide survey here?
41
42 **MR. RINDONE:** That's Gulf-wide.
43
44 **DR. PATTERSON:** Do you have the eastern Gulf with the confidence
45 intervals? I think that would get to what Dr. Frazer was
46 indicating earlier, but, while that's looked for, Jason correctly
47 anticipated that I was going to comment on what Doug had said, and
48 I think it's really important, as Doug was talking about, to try

1   to look for consistencies versus inconsistencies and different
2   forms of information and what could be in conflict.
3
4   What at first may appear to be a conflict, and a flat or declining
5   longline in the eastern Gulf, versus the estimates from the Great
6   Red Snapper Count, from Florida in particular, but also Alabama
7   and Mississippi, in that, you know, we're estimating to have quite
8   a few fish in those regions, and the Florida number has been talked
9   about quite extensively here.
10
11 I think it's important to remember that those were mostly small,
12 young fish, less than 500 millimeters total length, with a mean
13 size of 400 and a mode of 350 millimeters, and those are two-year-
14 old fish, and so what we're seeing in those areas matches what
15 fishermen have reported for the West Florida Shelf of having small,
16 young fish abundant in the system, and that's not inconsistent
17 with the longline survey in the eastern Gulf having plateaued and
18 then declined in the more recent years, because the fish of the
19 sizes that we're talking about -- They wouldn't have recruited to
20 that gear yet, and so they wouldn't be seen. The longline survey
21 has traditionally been used as an index of adult red snapper, but
22 these fish that we're talking about may not even have spawned yet.
23
24 **CHAIRMAN NANCE:** Thank you, Will. Ryan, to that point?
25
26 **MR. RINDONE:** Yes, Mr. Chair, and I was just going to -- Directly
27 to what Dr. Patterson was talking about is on Slide 4 of Item 15(b)
28 from the January SSC meeting, and this is the bottom longline
29 sampling by the Science Center and Dauphin Island Sea Lab for 2021,
30 where it's showing a very low to negligible CPUE in the eastern
31 Gulf, and this lines up well, I think, with what Dr. Patterson was
32 saying, and the NMFS bottom longline gear is simply not selecting
33 for these younger, smaller red snapper.
34
35 **CHAIRMAN NANCE:** Okay. Thank you, Ryan.
36
37 **DR. PATTERSON:** Along those lines, one thing that we didn't talk
38 about yesterday, in the exploitation rate analyses, and trying to
39 figure out about mean sizes, is that many of these fish that we
40 estimated to occur in Florida would be sub-legal fish, especially
41 in the recreational fishery.
42
43 **CHAIRMAN NANCE:** Yes. Thank you, Will. Roy.
44
45 **DR. CRABTREE:** Let me try to focus us back in on the task at-hand,
46 which is to set an ABC for moving forward, and so, to try and get
47 this conversation moving and bring us to some conclusion, I would
48 like to offer a motion.

1
2 **CHAIRMAN NANCE:** Let Jessica get set.
3
4 **DR. CRABTREE:** All right. **The SSC approves an ABC of 16.31 million**
5 **pounds whole weight.** If I get a second, I will offer some
6 rationale.
7
8 **CHAIRMAN NANCE:** Do we have a second for that motion?
9
10 **DR. BARBIERI:** I will second for discussion.
11
12 **CHAIRMAN NANCE:** Okay. Luiz seconds that.
13
14 **DR. CRABTREE:** All right, and so I think, normally, we would use
15 the P* of 40 percent, which would set an ABC here of 17.65 million
16 pounds, but I think we've had a lot of discussion about there are
17 more uncertainties and more concerns here than we would normally
18 have if we had a full assessment, and we also have talked
19 extensively about the concerns with the trends in the longline
20 fishery and public testimony that we've heard that is advising us
21 to be cautious, and so I feel like, in this case, the uncertainty
22 is greater than normal, and, if you read through the Science Center
23 report, they're pretty clear that this P* value does not capture
24 all of the uncertainty that exists, because there are a lot of
25 things that have unquantified uncertainties.
26
27 I have used the P* of 30 percent as sort of a metric to incorporate
28 the additional uncertainty into our ABC, and so the basis of this
29 then would be the five-year average with the P* of 30 percent, and
30 that is intended to incorporate the additional uncertainty into
31 our ABC, beyond what the P* of 40 percent would normally account
32 for.
33
34 **CHAIRMAN NANCE:** Is there discussion? Josh.
35
36 **DR. KILBORN:** I just want to, I guess, go on record that I don't
37 think that that is conservative enough, and I think that the
38 uncertainties are greater than the buffer that this provides, and
39 so I would like to consider, like I said before, a lower ABC, and,
40 honestly, I would probably be comfortable considering the one that
41 is under review right now with the Science Center, or whoever it
42 is, and I forget, and I'm sorry, of 15.4, but I don't think I could
43 -- I don't think I could vote for this, and I think I would have
44 to vote no for a 16.3 million ABC. Thank you.
45
46 **CHAIRMAN NANCE:** Josh, thank you. Harry.
47
48 **MR. BLANCHET:** I pulled my hand down, but I guess I wasn't quick

1 enough, but that's okay. My question really goes -- So we've
2 already taken the OFL value and approved it, and so, just as an
3 explanation, given what the OFL has been set at, I think that we
4 need to clearly lay out, and I think Roy did a pretty good job of
5 it, why we think the 0.3 is appropriate, as opposed to a different
6 value, whether it's 75 percent or so other reduction off of the
7 OFL, but just to be clear where that is.
8
9 I don't have an issue, as such, with the current motion, given
10 where the OFL is, and I had more of an issue with the OFL, and so
11 I would probably vote for the motion, because the OFL has already
12 been set, and I have no better alternative to offer for the setting
13 of the ABC off of that, but it does give me a lot of pause, in
14 terms of how we defend this motion to the council. Thank you.
15
16 **CHAIRMAN NANCE:** Thank you, Harry. Jim.
17
18 **DR. TOLAN:** Thank you, Mr. Chairman. I think Roy has definitely
19 laid out a good rationale of why the ABC would be set at this
20 level, given how we got to this point, and my comment may or may
21 not be directly tied to the motion, but I'm still a big fan of
22 setting the ABC at 75 percent of the OFL, and I think it's a viable
23 option, and it's a much bigger buffer. Thank you.
24
25 **CHAIRMAN NANCE:** Thank you, Jim. Jason.
26
27 **MR. ADRIANCE:** Thank you, Mr. Chair. **This time, I do have a**
28 **substitute, and I am going to go back to the discussion we had**
29 **about the ensemble, and I know we've had a lot of discussion around**
30 **the uncertainty, but I think the ensemble already brings us down**
31 **a lot, and it's basically the above motion and substituting the**
32 **17.65, which would be that 0.4 P*, which we have typically used in**
33 **the past, and that's it.**
34
35 **CHAIRMAN NANCE:** Okay. Do we have a second for the substitute
36 motion?
37
38 **DR. POWERS:** I will second.
39
40 **CHAIRMAN NANCE:** Sean. Sean, you're up next. Go ahead.
41
42 **DR. POWERS:** I mean, Jason already talked about it, and I
43 understand the rationale that was presented before, but I think
44 0.4 is consistent with our control rule, and I know we have no
45 specific rule about integrating counts like the Great Red Snapper
46 Count, but, you know, I agree, and I think the UCB, the more
47 conservative UCB, inclusion, as well as that 0.14 is consistent
48 with what we've done in the past, in the last stock assessment.

1
2 **CHAIRMAN NANCE:** Okay. Thank you. Any other comments? Usually
3 Will does this, but do we need to have in this that we're using
4 the ensemble model with a P* of -- Those types of things?
5
6 **MR. RINDONE:** Yes, and so, using the ensemble approach and a P* of
7 0.4.
8
9 **CHAIRMAN NANCE:** 0.4. Okay. That just makes it to where somebody
10 can see this motion and see exactly where it's coming from. Okay.
11 With no other discussion, let me read the motion, the substitute
12 -- Doug, go ahead.
13
14 **MR. GREGORY:** Thank you, sir. I would have been quicker, but I
15 was trying to do some basic arithmetic. The 17.65 is 17 percent
16 above the existing ABC of 15.1 million pounds, and it's only 7
17 percent less than the OFL, which the latter gets back to the
18 ongoing issue of the buffers being very small, and I think the
19 desire, from management, has been to have a buffer big enough that
20 we can put a stop on the harvest, if the ABC is being exceeded,
21 before the OFL is exceeded. Now, the 16.1 is 8 percent above the
22 existing ABC, and 13 percent below the OFL, and so even an 8
23 percent increase is a substantial increase in the ABC. Thank you.
24
25 **CHAIRMAN NANCE:** Thank you, Doug. Jason.
26
27 **MR. ADRIANCE:** Thank you, Mr. Chair. To Doug's point, I would
28 simply say that, while the council can't exceed our ABC, they are
29 certainly not restricted to going lower, and they have obviously
30 heard these discussions, and they will be able to wrangle over
31 that management uncertainty, and they certainly have that ability
32 to go lower. Thank you.
33
34 **CHAIRMAN NANCE:** Jason, thank you. Doug.
35
36 **MR. GREGORY:** Jason, would you like to place a wager on that?
37
38 **MR. ADRIANCE:** No, sir.
39
40 **CHAIRMAN NANCE:** Luiz.
41
42 **DR. BARBIERI:** Smart man, Jason. Jason, just a comment here, and
43 I understand your rationale, and, I mean, you explained it well,
44 but I am just thinking that, in terms of the scientific uncertainty
45 here, we are telling the council, through this motion, that we
46 find acceptable it, right, to go with a 40 percent probability of
47 overfishing, given the amount of uncertainty involved in this
48 process, and this is the only way that I can read this, right,

because P* is the probability of overfishing that is acceptable,
given our risk tolerance, in this case, accounting for scientific
uncertainty.

I am having -- You know, I'm having trouble finding this a way to
account properly for that uncertainty, and I am not perfectly happy
with the 30 percent either, because of the reasons that Dr.
Crabtree pointed out, and, Roy, you said that's right explicitly
in the Center's paper, that they feel that even the ensemble is
not really properly capturing all the uncertainty here, but to go
to 40, to me, departs from our rationale for making recommendations
to the council, based on what we assume to be very high scientific
uncertainty here.

CHAIRMAN NANCE: Thank you, Luiz. Paul.

DR. MICKLE: Thank you, Mr. Chair, and, Luiz, you teed me up pretty
good there, and I appreciate it. I'm going to talk about
uncertainty and really how I am perceiving this, and I really
appreciate the discussion by everyone the whole week, and all the
comments were -- I was making lists of uncertainty and then our
issues of uncertainty and understanding the impacts of those
uncertainties on the analysis that the Southeastern Science Center
was putting forth.

When you have UCB percentages being discussed on what percentage
is best representative, and then we all know that P* is not the
best, and we've documented that in some of our decisions in the
past, and our recommendations of our insecurities in P* itself,
and the bottom longline uncertainties, with gear selection and age
selection of red snapper, and, even though it's a long-running
survey, I thought that Carrie made some really great points there
of really trying to take bottom longline as it is and what it is,
both spatially and selectively.

Also, local depletion issues, and, you know, this is managed as a
Gulf-wide stock, and we need to scientifically look at it as a
Gulf-wide stock, and so I'm not quite sure, and those regional
fishing efforts is obviously playing a big role in some of the
trends we're seeing, both in the data and the anecdotal stuff
that's been brought forward.

One thing that I am having real trouble with is it seems like all
the depletion issues are coming from one area of the Gulf,
especially the ones that have been brought forward to us today and
yesterday, and so you've kind of got to -- We still give scientific
recommendations Gulf-wide, and so I am really not recognizing a
lot of those comments.

1
2 Then, also, the 75 percent OFL, that's another strategy, but all
3 of this that I'm trying to lay out in my statement is just the
4 overall uncertainty is great, and it's become greater because the
5 science has become more focused on red snapper, and that's a good
6 thing, and so, the less we knew about red snapper ten years ago,
7 the uncertainties were less, because we weren't -- We didn't have
8 as much data, and we didn't have as much focus on the species, and
9 we didn't have as much effort toward the data streams and the
10 analysis that we have out of those data streams.
11
12 The point that I am trying to get at is it's a good thing, in a
13 way, because we're finally getting a grasp on the uncertainties of
14 the data, and all the data that we're getting, and so it's not
15 such a bad thing that uncertainty is increasing, and that's just
16 because we're getting a better handle on the uncertainty, and it
17 makes us all more nervous, because we're starting to understand
18 that there's a lot of uncertainty.
19
20 I think we can all agree upon that, but, as far as these motions
21 here, the more that we see of uncertainty, I agree with a lot of
22 the statements coming from some of the SSC members of, because of
23 this large uncertainty, we need to move forward in a cautious way,
24 but, again, we have to balance that Gulf-wide approach and keep it
25 scientific and get away from management-type statements from this
26 group.
27
28 It's not our responsibility, and it's not our job. We need to
29 focus on the science and do the best we can at grasping it and
30 give recommendations to the council that are based on how we
31 perceive the uncertainty, and it's going to be hard for me to
32 approach this substitute motion in a way that I'm thinking of all
33 of these points that I've tried to make here, but that's my two-
34 cents' worth, and I appreciate it, but I'm going to have a hard
35 time supporting this motion, and I would just lean on a more
36 conservative approach, as a Gulf-wide approach, looking at, if we
37 have to swallow P* in a way that we justify it, we need to swallow
38 it in a way that's conservative, and so thank you.
39
40 **CHAIRMAN NANCE:** Paul, thank you. Harry.
41
42 **MR. BLANCHET:** Going back to the logic behind P*, the council has
43 given us a range of P* that we can apply with our ABC Control Rule,
44 and, if I'm mistaken, and, Ryan, correct me if I'm wrong, the
45 minimum that we can go with P* is 0.3, and is that correct, Ryan?
46
47 **MR. RINDONE:** Yes, according to the current control rule, and it's
48 bracketed with 0.5 and 0.3, with 0.5 representing a 50 percent

probability, or risk, of overfishing, and that's usually reserved for the OFL, and then the ABC being somewhere below that, as far down as 0.3.

MR. BLANCHET: So the use of 0.3 to set an ABC would be where we have very little information to otherwise capture -- If we were looking at something like, I don't know, blueline tilefish, we would be looking at something like a P* of 0.3, if we were to use that ABC Control Rule and not some alternative.

If we use 0.3, with the most well-studied stock in the Gulf of Mexico, I think that we are going to get some serious questions asked about why did we go that low, with all of this information that is available, and I understand all of the arguments that have been made about how much is yet to be determined, and I think we're always going to have questions, and perhaps not to this degree, and certainly, after this is all run through a stock assessment, we're going to be a lot more understanding of what's going on, but I just don't see how we can support a lower P* than what we have.

There was a prior comment regarding the use of caution in this stock, and I support that, and I think that, if we're thinking of this in an ABC sense, I think that P* is more appropriate than 0.3. Thank you.

CHAIRMAN NANCE: Thank you, Harry. Jim.

DR. TOLAN: Thank you, Mr. Chairman. **I just sent in, to the meetings email, a second substitute motion, and I guess this is a question for Ryan, how that works, if that's the place to put it, as a second substitute, and, if I get a second on that, we can have that discussion, and, if not, then we can vote on this, the original substitute motion, but they should have it now, and it deals with setting the ABC at 75 percent of the OFL.** Thank you.

CHAIRMAN NANCE: Go ahead and put that second --

DR. TOLAN: On that, I just have XX million pounds, because it's somewhere in the range of fourteen-point-something, and I don't have the OFL number in front of me to make that conversation, but it's around fourteen-something million pounds.

MR. RINDONE: 14.18.

DR. TOLAN: Okay. Yes. Thank you, Ryan.

CHAIRMAN NANCE: Okay. Do we have a second for this motion?

1   **DR. SAUL:** I will second, for discussion.
2
3   **CHAIRMAN NANCE:** Okay. Steve, thank you. **We have a second**
4   **substitute motion that the SSC approves setting the ABC to 75**
5   **percent of the OFL, which corresponds to 14.18 million pounds whole**
6   **weight.** Okay. Is there discussion? Josh. I know you were
7   probably going to discuss something else, but, Josh, do you have
8   any -- Go ahead and --
9
10 **DR. KILBORN:** Yes, and I was actually trying to do some math as
11 well, real quick, but essentially, my -- I didn't get the math
12 done, unfortunately.
13
14 **CHAIRMAN NANCE:** That's okay.
15
16 **DR. KILBORN:** But my point was that the pending recommendation is
17 25.6 on the OFL and 15.4 on the ABC, which is about 60 percent of
18 the OFL, and so a 60 percent of the 18,9 that we're considering
19 now, I believe is somewhere around the eleven to twelve-million
20 range. Again, I didn't get the math done, but, if we're looking
21 at precedent, and something that has been done in the past, then
22 that would be in line with that as well, but this kind of falls in
23 line with this second substitute motion as well, and so that's --
24
25 **CHAIRMAN NANCE:** Okay. Ryan, to that point?
26
27 **MR. RINDONE:** Yes, and thank you, Mr. Chair. To that point, Dr.
28 Saul, one of the issues with that is that the OFL, in that scenario,
29 or sorry, Josh, Dr. Kilborn, the issue with that is that, in that
30 scenario, the 25.6 was based on the Great Red Snapper Count, and
31 the 15.4 was based on the NMFS bottom longline survey, and I think,
32 at this point, the SSC has established a record for why using
33 different surveys for catch advice in that manner is inappropriate,
34 especially since the ABC is supposed to be derived from the OFL.
35
36 **DR. KILBORN:** Thank you.
37
38 **CHAIRMAN NANCE:** Doug.
39
40 **MR. GREGORY:** Thank you. I have a few points. One, I don't think
41 the substitute motion is reasonable, since the current ABC is 15.1
42 million pounds, and, in Tom Frazer's language, that is going
43 backwards.
44
45 The other thing, with Harry, is, if this was an analysis that we
46 had done year-after-year, and had a track record, I would agree
47 with you completely, but this is a one-off analysis, and there is
48 no problem rationalizing why we should take the low end of the P*,

1 particularly given how we know how narrow the distributions that
2 the P* is coming from are, and the Science Center, and we, I think
3 -- Nobody on the SSC would say that all the uncertainty has been
4 documented, and so I think a P* of 0.3 is perfectly fine. I had
5 one other point, but I forgot it. Sorry. Thank you.
6
7 **CHAIRMAN NANCE:** Thank you, Doug. John.
8
9 **MR. MARESKA:** Doug made my first point, and I couldn't support the
10 second substitute motion, because the ABC is below the current
11 one, and I am in agreement with the substitute motion, the P* at
12 0.4, and I think that incorporates enough of the uncertainty, and
13 so, when we passed the original one, there was a lot of uncertainty
14 about the estimates themselves, and I feel like those have been
15 corrected, and everyone has their chance to speak to that, and so
16 I'm not sure where all this uncertainty concerns are stemming from.
17
18 **CHAIRMAN NANCE:** Thank you, John. Trevor.
19
20 **MR. MONCRIEF:**   John covered what I was going to speak to, and I
21 was just wondering, with the 75 percent of OFL, dropping it below
22 what the current ABC is, and below the current proposed ABC that's
23 being considered by the agency, is that -- I want to make sure
24 that I understand the rationale behind it, Jim, and is it that
25 there is so much uncertainty at play, in your mind, along with the
26 bottom longline trends, that's making you think that that's a more
27 conservative, or a better, option, and I just want to make sure
28 that I understand where this is all coming from.
29
30 **DR. TOLAN:** To that point, Mr. Chairman?
31
32 **CHAIRMAN NANCE:** Absolutely, Jim.
33
34 **DR. TOLAN:** Trevor, you're completely right, and we've had a lot
35 of discussion, in the last couple of days, about the uncertainty,
36 and we've had some discussion about how the route that we got to
37 this point to set an OFL is way different than we've really ever
38 done, and we're using a whole different metric, a whole different
39 set of numbers, and it's been sort of massaged up to this point,
40 and the uncertainty about the things that went into that, the
41 bottom longline, the east versus west, the difference in trends,
42 and I was really going -- I appreciate the fact that people notice
43 that the ABC is now going to be lower than what's being established
44 right now, but I was going on the fact that there is precedent to
45 setting the ABC to 75 percent of the OFL, and, given how we got to
46 the OFL now, yes, it's going to be a little bit lower, but I think
47 the buffer that we're all looking for between those two numbers is
48 a little greater going in this direction than setting it through

1 either of the P*s, and so that was sort of my rationale. Thank
2 you.
3
4 **MR. MONCRIEF:** Thank you, Jim.
5
6 **CHAIRMAN NANCE:** Will.
7
8 **DR. PATTERSON:** Thanks, Mr. Chair. I just have a question here
9 about the procedure, and I know that we often take sort of a loose
10 interpretation of rules of order here, but it's my understanding
11 that, when a substitute motion is offered, it has to be voted up
12 or down as substituting the original motion, and so we have a
13 substitute here, and then a second on top of that, but I don't
14 think there was ever a vote on the original substitute, and so
15 perhaps somebody from the council staff can weigh-in on this, but
16 it seems like we're kind of setting ourselves up for some trouble
17 here.
18
19 **CHAIRMAN NANCE:** Ryan, go ahead.
20
21 **MR. RINDONE:** Thank you, Mr. Chair. You can have up to two
22 substitute motions to the original motion. There can be any
23 additional substitute motions at this point, and so the order of
24 operations here would be to, unless it's withdrawn, to vote up or
25 down the second substitute motion. If it's voted up, and it
26 passes, then the substitute motion and the original motion are
27 null. If it's voted down, then we move to the substitute motion,
28 and, if it's not withdrawn, then it's either voted up or down,
29 and, if it's voted down, then we move to the original motion.
30
31 **DR. PATTERSON:** Okay. Thanks for that clarification.
32
33 **CHAIRMAN NANCE:** Thank you, Will. Jason. We're going to have to
34 get ready to vote here in a minute, but Jason.
35
36 **MR. ADRIANCE:** Thank you, Mr. Chair. Most of my points were
37 addressed, and I just had a procedural question about the 75
38 percent. I know that we had some discussion the other day about
39 that, and it's not quite a mathematical 75 percent, and would that
40 actually need to be projected by the Science Center, or is taking
41 a straight 75 percent the proper way to go about that? Thanks.
42
43 **CHAIRMAN NANCE:** Ryan, to that point?
44
45 **MR. RINDONE:** Jason, I think what you're talking about is the 75
46 percent at the FMSY proxy of 26 percent SPR, and what Matt Smith
47 had talked about yesterday, with respect to that not being a
48 straight 75 percent, has to do with the discard fleets not actually

1 being scaled down to 75 percent as well, because that discarding
2 isn't expected to be functionally different as a result of that
3 decreased yield from the actual directed fleets and the directed
4 removals.
5
6 In this case, in the case of the second substitute motion, and I
7 will let Jim Tolan and Steve Saul tell me I'm wrong, but this is
8 a straight 75 -- Setting the ABC at a straight 75 percent of the
9 OFL and not based on the 75 percent of the FMSY proxy that was
10 discussed yesterday, and so this constitutes a 25 percent buffer
11 between the OFL and the ABC and not setting the ABC at 75 percent
12 of FMSY.
13
14 **CHAIRMAN NANCE:** That's where that 14.18 comes from. Jim.
15
16 **DR. TOLAN:** You captured that perfectly, Ryan. Thank you. That's
17 exactly what I had in mind.
18
19 **CHAIRMAN NANCE:** Okay. Roy.
20
21 **DR. CRABTREE:** In terms of the second substitute motion, the
22 problem I have is that essentially where that leaves us is that we
23 have new information that we're reviewing that indicates the stock
24 is bigger than we thought it was, and our response would then be
25 to recommend an even lower catch rate than what we have now, and
26 that doesn't follow, to me, and so I can't go there.
27
28 In terms of the original motion of the 16.31 at the 30 percent P*,
29 what I am trying to do is actually achieve the 40 percent P*, and
30 I think that's a very reasonable chance of overfishing to go for,
31 but I don't think you get there by taking the P*, because, as the
32 Science Center said, there is more uncertainty than is actually
33 incorporated into the analysis, and so, in order to try and realize
34 an actual 40 percent chance of overfishing, I think you have to go
35 below that, and that's the rationale for the 30 percent.
36
37 **CHAIRMAN NANCE:** Okay. Thank you. Doug, and then we're going to
38 take a vote.
39
40 **MR. GREGORY:** Thank you. Somebody raised a procedural point, and
41 so it sent me searching, and I am looking at the national
42 guidelines for National Standard 1, and, in it, National Marine
43 Fisheries Service says -- It's talking about species, and it's
44 listed as a stock in the fishery, and the reference points for the
45 species, such as OFL and ABC, should be set based on the MSY for
46 the stock, and is this whole process we're going through, where
47 it's not based on MSY, that I recall, that it could be invalidated?
48

1 **CHAIRMAN NANCE:** Ryan, to that point?
2
3 **MR. RINDONE:** This is all based on the FMSY proxy of 26 percent
4 SPR for the OFL, derived from the ensemble approach of blending
5 the three scenarios from the model that Matt produced, and so it's
6 all based on the FMSY proxy, and so, if the ABC is derived from
7 the OFL, then, by default, the ABC is also derived from the MSY
8 proxy, or F at MSY proxy.
9
10 **MR. GREGORY:** Thank you.
11
12 **CHAIRMAN NANCE:** Okay. Thank you, Ryan. Go ahead, Luiz.
13
14 **DR. BARBIERI:** Thank you, Mr. Chairman, and I guess this explains
15 -- I mean, that was my misunderstanding as well, right, about what
16 that analysis had produced, and I think that explains what Will
17 asked yesterday about my comments regarding the reference point,
18 and I did not believe -- I didn't think that we had an estimate of
19 the MSY proxy, through this analysis, and I thought we had
20 developed projections that were applying F 26 percent SPR levels
21 onto the biomass, but, if that was wrong, then, sure, by all means,
22 and that was my misunderstanding, but I did not think that that
23 analysis had produced a new estimate of the MSY proxy.
24
25 **CHAIRMAN NANCE:** Ryan, to that point?
26
27 **MR. RINDONE:** It's not a new analysis. It's using the proxy that
28 was used in the SEDAR 52, and so the FMSY proxy that was used for
29 Matt's analysis was 26 percent SPR.
30
31 **DR. BARBIERI:** Right, and I mean the value, what the estimate of
32 that quantity is, and that's what I'm saying and not the actual
33 what the proxy is, but the estimated value of that proxy quantity.
34
35 **CHAIRMAN NANCE:** Yes. Okay. Thank you. Jessica, go ahead and
36 bring up the language, and we'll go ahead and vote on the second
37 substitute motion.
38
39 **MS. MATOS:** Rich Woodward.
40
41 **DR. WOODWARD:** Abstain.
42
43 **MS. MATOS:** Steven Scyphers.
44
45 **DR. SCYPHERS:** No.
46
47 **MS. MATOS:** Jim Nance.
48

CHAIRMAN NANCE: No.

MS. MATOS: Will Patterson.

DR. PATTERSON: Abstain.

MS. MATOS: Sean Powers.

DR. POWERS: No.

MS. MATOS: Jim Tolan.

DR. TOLAN: Yes.

MS. MATOS: Trevor Moncrief.

MR. MONCRIEF: No.

MS. MATOS: Paul Mickle.

DR. MICKLE: No.

MS. MATOS: David Griffith.

DR. GRIFFITH: No.

MS. MATOS: Doug Gregory.

MR. GREGORY: No.

MS. MATOS: Benny Gallaway.

DR. GALLAWAY: No.

MS. MATOS: Roy Crabtree.

DR. CRABTREE: No.

MS. MATOS: David Chagaris.

DR. CHAGARIS: No.

MS. MATOS: Harry Blanchet.

MR. BLANCHET: No.

MS. MATOS: Luiz Barbieri.

DR. BARBIERI: No.

MS. MATOS: Lee Anderson is absent. Jason Adriance.

MR. ADRIANCE: No.

MS. MATOS: Michael Allen.

DR. ALLEN: No.

MS. MATOS: John Mareska.

MR. MARESKA: No.

MS. MATOS: Luke Fairbanks.

DR. FAIRBANKS: No.

MS. MATOS: She's absent as well. Jack Isaacs.

DR. ISAACS: No.

MS. MATOS: Mandy is not here either. Josh Kilborn.

DR. KILBORN: I do think this number is too low, but I think it's better than the others, and so I am going to vote yes.

MS. MATOS: Steven Saul.

DR. SAUL: No.

CHAIRMAN NANCE: Okay, and so the second substitute motion has failed. We will go ahead now and vote on the substitute motion, as soon as Jessica is ready. I am going to go ahead and read the substitute motion. **The SSC approves an ABC of 17.6 million pounds whole weight, using the ensemble approach, and a P* of 0.4.**

MS. MATOS: Jim Tolan.

DR. TOLAN: No.

MS. MATOS: Sean Powers.

DR. POWERS: Yes.

MS. MATOS: Trevor Moncrief.

MR. MONCRIEF: Yes.

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 1
 2   MS. MATOS:  Doug Gregory.
 3
 4   MR. GREGORY:  No.
 5
 6   MS. MATOS:  David Chagaris.
 7
 8   DR. CHAGARIS:  No.
 9
10   MS. MATOS:  Lee Anderson is absent.  John Mareska.
11
12   MR. MARESKA:  Yes.
13
14   MS. MATOS:  Jack Isaacs.
15
16   DR. ISAACS:  Yes.
17
18   MS. MATOS:  Steven Saul.
19
20   DR. SAUL:  No.
21
22   MS. MATOS:  Rich Woodward.
23
24   DR. WOODWARD:  As usual, abstain.
25
26   MS. MATOS:  Will Patterson.
27
28   DR. PATTERSON:  Abstain.
29
30   MS. MATOS:  Paul Mickle.
31
32   DR. MICKLE:  No.
33
34   MS. MATOS:  Benny Gallaway.
35
36   DR. GALLAWAY:  No.
37
38   MS. MATOS:  Harry Blanchet.
39
40   MR. BLANCHET:  Yes.
41
42   MS. MATOS:  Jason Adriance.
43
44   MR. ADRIANCE:  Yes.
45
46   MS. MATOS:  Luke Fairbanks.
47
48   DR. FAIRBANKS:  No.
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1
2    MS. MATOS:  Josh Kilborn.
3
4    DR. KILBORN:  No.
5
6    MS. MATOS:  Michael Allen.
7
8    DR. ALLEN:  No.
9
10   MS. MATOS:  Luiz Barbieri.
11
12   DR. BARBIERI:  No.
13
14   MS. MATOS:  Roy Crabtree.
15
16   DR. CRABTREE:  No.
17
18   MS. MATOS:  David Griffith.
19
20   DR. GRIFFITH:  No.
21
22   MS. MATOS:  Jim Nance.
23
24   CHAIRMAN NANCE:  No.
25
26   MS. MATOS:  Steven Scyphers.
27
28   DR. SCYPHERS:  Yes.
29
30   CHAIRMAN NANCE:  Okay.  **The motion fails seven to thirteen with**
31   **two abstentions**.  We will go back to the original motion, which I
32   am going to edit.  We need to add -- I am going to change the
33   motion here a little bit, just to add the SSC approves an ABC of
34   16.31 million pounds whole weight, using the ensemble approach and
35   a P* of 0.3.  Let's go ahead and vote on this motion.
36
37   DR. PATTERSON:  Jim, while you're editing this, Roy said something
38   about a five-year average before, which I would include "red
39   snapper" in this.
40
41   CHAIRMAN NANCE:  Okay.  Let's see.  Approves an ABC whole weight
42   using the --
43
44   MR. RINDONE:  We could say based on the five-year average, using
45   the ensemble approach.
46
47   CHAIRMAN NANCE:  Okay.  Based on the five-year average, using the
48   ensemble approach, and I think ABC of 16.31 million pounds whole
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 1  weight, and I guess we need to put red snapper in there.  Thank
 2  you, Will.  Okay.  Perfect.  Okay.  Let's go ahead and vote on
 3  this one.
 4
 5  MS. MATOS:  Steven Saul.
 6
 7  DR. SAUL:  No.
 8
 9  MS. MATOS:  Jack Isaacs.
10
11  DR. ISAACS:  Yes.
12
13  MS. MATOS:  Josh Kilborn.
14
15  DR. KILBORN:  No.
16
17  MS. MATOS:  Luke Fairbanks.
18
19  DR. FAIRBANKS:  Yes.
20
21  MS. MATOS:  John Mareska.
22
23  MR. MARESKA:  No.
24
25  MS. MATOS:  Jason Adriance.
26
27  MR. ADRIANCE:  No.
28
29  MS. MATOS:  Michael Allen.
30
31  DR. ALLEN:  Yes.
32
33  MS. MATOS:  Luiz Barbieri.
34
35  DR. BARBIERI:  Yes.
36
37  MS. MATOS:  Harry Blanchet.
38
39  MR. BLANCHET:  No.
40
41  MS. MATOS:  David Chagaris.
42
43  DR. CHAGARIS:  Yes.
44
45  MS. MATOS:  Doug Gregory.
46
47  MR. GREGORY:  Yes.
48
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MS. MATOS: Benny Gallaway.

DR. GALLAWAY: Yes.

MS. MATOS: Roy Crabtree.

DR. CRABTREE: Yes.

MS. MATOS: David Griffith.

MR. GRIFFITH: Yes.

MS. MATOS: Paul Mickle.

DR. MICKLE: Yes.

MS. MATOS: Trevor Moncrief.

MR. MONCRIEF: No.

MS. MATOS: Sean Powers.

DR. POWERS: No.

MS. MATOS: Will Patterson.

DR. PATTERSON: Abstain.

MS. MATOS: Jim Nance.

CHAIRMAN NANCE: Yes.

MS. MATOS: Steven Scyphers.

DR. SCYPHERS: No.

MS. MATOS: Rich Woodward.

DR. WOODWARD: Abstain.

MS. MATOS: Jim Tolan.

DR. TOLAN: No.

CHAIRMAN NANCE: Thank you very much. These are close votes, and
we have had a great deal of discussion, and I want to say I
appreciate all of that discussion, and I know it's hard to make
these decisions, and I know we're doing it on the best science

1 here, but I appreciate all of the discussion. Sean.
2
3 **DR. POWERS:** Jim, I was just going to say that, I mean, even though
4 they're close votes, obviously, the council will have some
5 decision, but, realistically, I mean, we're talking differences of
6 a million pounds, with sixteen, and so I think, as long as we keep
7 that in mind -- The votes are tight, but the real differences
8 aren't that large.
9
10 **CHAIRMAN NANCE:** I appreciate that, Sean. You're absolutely right.
11 Red snapper is done, or red snapper is done for this meeting, and
12 let me say this, and, while my voice is at the council meeting, I
13 hope that I do an admirable job of portraying what this body is
14 recommending, and it's not just mean standing up there, but what
15 I'm trying to do is all twenty-five of us are up there talking
16 about this, and so I try to carry all the discussions we've had
17 and all of the risks and things like that that we have talked
18 about, and so I appreciate your support there. Doug.
19
20 **MR. GREGORY:** Before we go to lunch, I just wanted to say that I
21 would be willing to make a collection, so that we can get you an
22 armored vest.
23
24 **CHAIRMAN NANCE:** So we can't start shrimp, and that's our next
25 item, and so let's go ahead, and we'll break until 1:00, and we'll
26 come back at 1:00 Eastern Standard Time, and we'll have Item Number
27 XV, which is an Update on the Development of the Brown and White
28 Shrimp Empirical Dynamic Models, and we'll have a presentation
29 after lunch, and so thanks, everybody.
30
31 (Whereupon, the meeting recessed for lunch on March 10, 2022.)
32
33   - - -
34
35   March 10, 2022
36
37   THURSDAY AFTERNOON SESSION
38
39   - - -
40
41 The Meeting of the Gulf of Mexico Fishery Management Council
42 Standing and Special Reef Fish, Special Socioeconomic & Special
43 Ecosystem Scientific and Statistical Committees reconvened on
44 Thursday afternoon, March 10, 2022, and was called to order by
45 Chairman Jim Nance.
46
47 **CHAIRMAN NANCE:** Our item here is Number XV, and it's an Update of
48 the Development of the Brown and White Shrimp Empirical Dynamic

1 Models, and Dr. Masi and Dr. Munch, and I'm not sure who is going
2 to present.
3
4 **REVIEW: AN UPDATE ON THE DEVELOPMENT OF BROWN AND WHITE SHRIMP**
5 **EMPIRICAL DYNAMIC MODELS (EDM)**
6
7 **DR. MICHELLE MASI:** Thanks, Mr. Chair. I think Steve is going to
8 share his screen, if council staff can allow that.
9
10 **CHAIRMAN NANCE:** Okay, and I'm sure that Jessica knows exactly
11 what to do. Before we begin, and Matt reminds me, and I appreciate
12 that, let's go ahead and go through the scope of work, and then,
13 Dr. Masi, we'll turn it over to you for the presentation.
14
15 **DR. MASI:** Okay. Thanks, Mr. Chair.
16
17 **DR. MATT FREEMAN:** For this agenda item, Dr. Michelle Masi with
18 SERO and Dr. Steve Munch with the Southwest Fisheries Science
19 Center will present an update on the development of empirical
20 dynamic models for predicting brown and white shrimp abundance in
21 the Gulf of Mexico and provide input on those this project relates
22 to the previous efforts by the various working groups for shrimp
23 and the broader upcoming SEDAR research track assessment scheduled
24 to start in mid-2023.
25
26 The SSC should consider the information presented and ask questions
27 and make recommendations, as appropriate, and I did want to add,
28 just for additional information for the SSC, the Shrimp AP will be
29 receiving a similar presentation to this at the end of the month.
30
31 **CHAIRMAN NANCE:** Okay. Thank you. Doug Gregory, please.
32
33 **MR. GREGORY:** Just a minor point. While this might be an update
34 to the models that we presented to the shrimp working group, I
35 don't believe this has ever been presented to the SSC.
36
37 **CHAIRMAN NANCE:** You're absolutely correct. It has not.
38
39 **MR. GREGORY:** Okay. I'm just being persnickety.
40
41 **CHAIRMAN NANCE:** Okay. Thanks, Doug. Michelle, go ahead, please.
42
43 **DR. MASI:** Great. Thanks, Mr. Chair. Steve, I am guessing you're
44 on and managing the slides.
45
46 **DR. STEPHAN MUNCH:** I think I am. Can you guys see the title
47 slide?
48

1　**CHAIRMAN NANCE:**　Yes, we can, and we can hear you loud and clear.
2
3　**DR. MASI:**　Perfect.　Thanks.　All right, and so hello, everyone.
4　I'm Dr. Michelle Masi, and I'm with Dr. Steve Munch today, and,
5　together, we're going to show you some exciting progress that we've
6　made on the development of empirical dynamic models for brown and
7　white shrimp, and I promise that we will not mention red snapper
8　one time throughout the entire presentation.
9
10　To get us started, on this slide, I wanted to remind everyone how
11　we got to this point in the research process for shrimp, and so,
12　in 2019, I hosted an internal model review workshop, where Center
13　stock assessment analysts reviewed the historic shrimp age-
14　structured models, and then, following that internal review
15　process, I worked on updating and improving the historic brown
16　shrimp model, based on the recommendations from the review panel.
17
18　Then, in November of 2019, I worked with Rick Methot, and, at the
19　time, Methot pointed out some technical concerns about the models,
20　and so I spent the next several months working on updating the
21　historic models to present day and also running model diagnostics
22　and creating diagnostic plots, and then, prior to the SSC meeting
23　in 2020, I met with Center leadership and Rick Methot, and,
24　together, we reviewed the model outputs and the model diagnostics
25　and highlighted a number of technical issues among all three models
26　that had not been previously identified.
27
28　Then, following the leadership-level review, I then went to the
29　SSC, to present the 2020 penaeid assessment model outputs, in the
30　spring of 2020, and, at that time, the SSC decided not to use the
31　2020 assessment runs for management advice, at which point the
32　research track planned for the penaeid shrimp began, and the five
33　shrimp data working groups were formed.
34
35　Then, by July of 2021, several of the shrimp data working groups
36　had concluded, and that's including the shrimp SEAMAP working
37　group, which found that the SEAMAP index is a representative index
38　of penaeid shrimp abundance, and, also, throughout 2021, I was
39　simultaneously working with Dr. Munch, in order to develop
40　alternative assessment models, and that, of course, brings to me
41　today and why we're here, which is to present an update to the SSC
42　on the development of those models.
43
44　On this slide, I want to spend just a little time reviewing with
45　you all some of the considerations that make assessing penaeids
46　more complicated than perhaps many of the finfish stocks that we're
47　used to assessing, and so, primarily, of course, is the issue that
48　penaeids are considered annual crops, and that's, of course, due

1 to their high natural mortality, and, also, in addition, we found
2 -- Or perhaps I should say we were reminded, during the shrimp
3 life history working group sessions, that, today, we still lack
4 age structure data for all three penaeid stocks, and we also have
5 limited biology data for all three, and, actually, the only
6 available data that we do have is based on studies from the 1970s,
7 and, importantly, we lack a recruitment signal, or an environmental
8 signal, for all three penaeids, and this one is important, given
9 we know that these stocks have highly variable annual biomass, and
10 that's being driven by environmental processes.
11
12 The last bullet here is just an important consideration about the
13 time lag to receive the processed landings data from state trip
14 tickets, and so the issue is that the Science Center doesn't
15 receive last year's landing data until about mid to late March of
16 the current year, and so, as an example, in March of 2020, I
17 reported on the 2018 stock status of brown, white, and pink shrimp,
18 because the assessment reports are due to the council in the
19 spring, and yet we don't have the complete landings data from last
20 year in time to be able to update those historic models and then
21 be able to present those model outputs by the March meetings.
22
23 That is a problem, given these are annual crops, and so remember
24 that, because of the time lags to receive the landings data, we
25 have historically presented the annual penaeid stock status based
26 on individuals that are no longer alive in the system.
27
28 On this slide, I wanted to review the penaeid shrimp reporting
29 requirements, and so, as a reminder, Shrimp Amendment 15 requires
30 that NMFS produce annual stock determination criteria, or SDC, for
31 penaeids, and, importantly, these benchmarks that are listed in
32 Shrimp Amendment 15 were established using 2012 SS model outputs.
33 The point here is that this amendment requires these benchmarks to
34 be updated every five years, and so, of course, it is time to
35 update that amendment and those estimates.
36
37 Also, in Shrimp Amendment 15, it stated that, if the maximum
38 fishing mortality threshold is exceeded for two consecutive years,
39 then action is required by the council to prevent any continued
40 overfishing. However, remember that, given the fishery data lags
41 that I just highlighted, individuals are largely gone from the
42 system when the SDC got presented, and so, if you were to add two
43 years of monitoring overfishing for these stocks, then you would
44 be about four years out from taking any action on protecting these
45 annual crops. In other words, it's not very responsive modeling
46 or management.
47
48 I also wanted to highlight here that Shrimp Amendment 17B defines

1 aggregate MSY and OY, but note that the aggregate OY is actually
2 based on a Schaeffer production model, and so it's completely
3 separate from the species-specific SS models, and, also, aggregate
4 MSY and OY are accounting for all managed shrimp species, and so
5 that's brown, white, and royal red, and they are also solely based
6 on offshore landings, whereas the species-specific benchmarks are
7 based on the Stock Synthesis model outputs, and those models are
8 based on inputs of species-specific effort, in the form of catch
9 per unit effort anyway, and those models use inshore and offshore
10 landings.
11
12 The point here is that, should we decide to move away from age-
13 structured models for penaeids, then that decision alone would not
14 mean that we need to alter the aggregate MSY or OY estimates.
15
16 To summarize here some modeling take-aways, our preliminary
17 findings of the research track process, to-date, show that the
18 existing data limitations make age-structured models inappropriate
19 for assessing penaeids. Also, in 2021, the SEAMAP working group
20 found SEAMAP to be a representative index of penaeid shrimp
21 abundance, and, further, considering the large number of technical
22 concerns among the three penaeid age-structured models, the
23 derived benchmarks from those models were inaccurate, and, also,
24 they are in need of updating, based on the five-year timeline that
25 is defined in Shrimp Amendment 15.
26
27 **CHAIRMAN NANCE:** Michelle, we have a question, if you want to pause
28 just for a sec. Harry.
29
30 **MR. BLANCHET:** I am sorry, and this is a couple of slides back,
31 and I can wait until the end.
32
33 **DR. MASI:** Okay. No problem.
34
35 **CHAIRMAN NANCE:** Okay. Thank you.
36
37 **DR. MASI:** Okay. Thanks, Mr. Chair. All right, and so now, as I
38 mentioned already, NMFS is required to present annual estimates of
39 SDC for all three penaeid stocks, but I am posing this question to
40 you all for consideration as we continue our presentation today,
41 and do we really need age-structured models, like SS, in order to
42 provide SDC for penaeids?
43
44 I think what we need to do, as the image here suggests, is take a
45 step back and consider a balance, for penaeids, between model
46 complexity and the existing data limitations with the
47 responsiveness of the modeling and the derived management advice,
48 and so now, with that, and hopefully with your curiosity

312

1   heightened, I am going to turn it over to Dr. Steve Munch. Steve.
2
3   **DR. MUNCH:** Thanks, Michelle. I am going to talk about our
4   empirical dynamic modeling, as applied to brown shrimp and white
5   shrimp, and so I will start off with a little bit of background on
6   EDM, and then I will show you the results for brown and white
7   shrimp.
8
9   Importantly, while most assessments assume that things like
10 fecundity, mortality, and growth are relatively constant, we know
11 that these are influenced by the environment and by interactions
12 with other species, but we also know that we never have enough
13 data to really account for all of that, and so empirical dynamic
14 modeling, importantly, based on Takens' theorem of delay
15 embedding, the argument is that we can use lags of a single
16 variable to recover the full system dynamics, and that is, in the
17 specific case of shrimp, we could potentially implicitly account
18 for the effects of the environment and predation by other species
19 using lags of observed shrimp abundance.
20
21 Now, since that probably sounds too good to be true, here's a
22 little illustration, and the illustration here is from a three-
23 species food web, composed of a producer, a grazer, and a predator,
24 and those, for lack of imagination, will be called X, Y, and Z.
25
26 As the simulation runs, the time series is being traced out here,
27 and so this abundance versus time, and the dynamics look fairly
28 complicated, but we could take these points from these three
29 different plots and plot them, the contemporaneous points, in this
30 X, Y, Z space, and so the axes here are the abundance of the
31 producer, the grazer, and the predator. We can see that the
32 complicated-looking dynamics that are being traced out up here
33 actually trace out a fairly simple shape over here, and that's the
34 attractor for the system.
35
36 Now, the red thing on the right also looks like an attractor, but,
37 importantly, that's been constructed using only the abundances of
38 the producer, and that's the abundance of the producer now, a step
39 into the future, and three steps into the future, and, now, the
40 attractor, in these delay coordinates, and so this reconstructive
41 attractor, it's obviously not exactly the same shape as the one in
42 the original coordinate system, but there is clearly a one-to-one
43 correspondence between them, and that's the important thing.
44
45 Now, the video is cool and all, but what can we actually do with
46 this, and, well, the idea is that, if we didn't know any equations
47 for the system, but we did have enough data to reconstruct the
48 attractor, and we knew where we are now, and so let's say we know

1 we're somewhere in this circle, and we could look for times that
2 the system had previously passed through that circle and ask where
3 those trajectories went and use that to make a prediction.
4
5 Now, if we repeated that exercise throughout the sort of state
6 space here, by moving the circle and asking where things went,
7 we're effectively constructing an empirical discrete time model
8 for the system, and now we can also do that -- We can play that
9 same game in the delay coordinates attractor, and, if we do that,
10 we end up with an analogous model that is in delay coordinates,
11 and it's predicting shrimp abundance next time using only -- Not
12 shrimp. Sorry. Producer abundance next time, using only lags of
13 the producer, and the dynamics of this reconstructed model are
14 equivalent to the model in the full state space, but they're based
15 only on the observed time series, and so to emphasize that the two
16 important things for EDM, in general, are that we don't need data
17 on all of the state variables to make accurate predictions, and we
18 don't need to have equations to make predictions if we have enough
19 data to reconstruct the attractant, and so that's a big ask.
20
21 Now, obviously, what I have shown you is just a simulation, and
22 the real world is a lot more complicated, and data are often a lot
23 messier, and so, to see how this stuff works in real life, we
24 applied it, a few years ago, to predicting recruitment, and, as
25 you all know, predicting recruitment is a hundred-year-old problem
26 in fisheries oceanography, in part because stock and recruitment
27 data often look like the data that I've shown here for sand eels,
28 which is to say not good. That does not look like there is a clear
29 relationship between stock and recruitment, and that's what these
30 often look like.
31
32 The point is that predicting recruitment provides us with a
33 challenging benchmark to evaluate the utility of EDM for fisheries,
34 and so, to do that, we used Ransom Myers' database of stock and
35 recruitment estimates, which includes survey estimates of
36 recruitment, as well as VPA-based estimates of recruitment and
37 statistical catch-at-age models, and so we used data for 185
38 stocks, representing seventy-two different species, and, to make
39 predictions, we fit our EDM models using lags of both stock size
40 and recruitment, and, for comparison, we fit three different stock
41 recruitment models that are commonly used, and that is Ricker,
42 Beverton-Holt, and Schnute.
43
44 Here is how it turned out, and the horizontal axis in this plot is
45 the mean square error for our EDM predictions, and the vertical
46 axis is the mean square error for our Beverton-Holt model, and I
47 can show you the results for Ricker and Schnute, and it turns out
48 the same. I should point out that the mean square error here is

the error in leave-one-out predictions relative to the total
variance.

The black line here is the one-to-one line, and so, in 90 percent
of the stocks that we looked at, the EDM predictions have a lower
prediction error than the Beverton-Holt model, and the prediction
error is, on average, 24 percent less, but, in some cases, and so
that's averaging over everything, but, in some cases, the error is
much, much less, right, like up here in the upper-left.

That's pretty important, and, now, one of the other things that
comes out of this analysis is that we can look across different
species and ask what makes some more predictable than others, and
one of the things that comes out is that, if we look at the
prediction error relative to the number of generations that we've
sampled, and so this axis is the number of observations divided by
the age at maturation, and it looks like, if we've seen ten or
more generations worth of data, that we can actually do a pretty
good job of predicting the dynamics, using these methods.

They work the best when we have long time series, or, put another
way, short-lived species, and I think it's this plot that actually
prompted Rick Methot to suggest that I try this stuff on shrimp.

One last method thing before I get to the application for shrimp,
and, when we have multiple time series, we can try to share
information across them by imagining that the delay embedding map
for each series comes from a common distribution, which is what we
do in standard hierarchical modeling, and so the argument here is
that the delay embedding map for a given location shares a common
mean across all different sites, and then there's a site-specific
deviation, and that's sort of illustrated here, where we have the
average delay embedding map, and then within-site dynamics are
allowed to be a little bit different from that. This way, we can
combine information without having to assume that the dynamics are
identical.

Now, we do this by adding a single additional parameter, which is
this Row D, which we're calling the dynamic correlation, because
it estimates the similarity across sites in the delay embedding
map, and so, when Row D is equal to one, the within-site dynamics
are identical in both locations, and, where Row D is zero, then
the dynamics in each location are independent, and so what this
gives us is a way to determine whether there is any spatial
variation in dynamics as we move across the Gulf.

All right, and so, finally, to something about shrimp, we applied
our hierarchical EDM approach to zone-specific estimates of catch

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per unit effort on brown shrimp and white shrimp from the SEAMAP
survey. I should note that, because of limited data, and we
combined Zones 9, 10, 11, and 12, and we combined Zones 13 and 14,
and the time series -- Any data available from Zones 1 through 8
were too short for us to use, and so we focused primarily on the
western Gulf.

The delay embedding models that we fit included lags of abundance
in each zone, as well as the current temperature, salinity, and
dissolved oxygen, but we found that only temperature and lags of
abundance were relevant to making predictions, and I should also
point out that the predictions that I am going to show are
sequential, which is that the prediction for a given year uses
only data from previous years, and so we did this rather than leave
one out. Although the predication accuracy is less, it gives us
a better sense of how it would perform in real online prediction.

Here are the results for brown shrimp, and there's a lot of things
going on in this slide, and so on the left are within-zone
predictions, and the black dots are the observed catch per unit
effort for each year, and the blue lines are the EDM year ahead
predictions, and so, across these nine statistical zones, we see
the correlation between the predictions and observed, ranging from
0.72 to 0.91, which is pretty good, and then overall performance
is summarized in these two panels up here, and so this is a plot
of the predicted catch per unit effort within each zone, versus
the observed, and the correlation here is 0.86.

It seems, for management purposes, we are probably more interested
in being able to predict Gulf-wide abundance rather than in a
specific stat zone, and so here we have a plot of the average catch
per unit effort, or the abundance index, for the Gulf-wide -- The
Gulf-wide abundance index, and that's the black dots, and the blue
dots are the EDM predictions, and the correlation there is 0.89.

One last thing is we have our comparison, down here, between the
dynamic correlation versus the Pearson correlations through time,
and so, just to remind you, the dynamic correlation measure is how
similar the delay embedding map is, and so how similar the
dynamics, the model, is, versus the temporal correlations, which
just tell us how similar the time series are through time.

The thing to take from this is that there isn't a lot of evidence
for very strong spatial variation, at least across the western
Gulf, with the exception of Zone 11, which I will remind you is
the sort of pooled zone that is just at the mouth of the
Mississippi.

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1 Results for white shrimp are broadly similar, with the caveat that
2 the overall predictions within zone are somewhat less well
3 correlated, and so the overall correlation is 0.75, as opposed to
4 0.86, though the prediction for the Gulf-wide index is still pretty
5 good, and the correlation there is 0.85, and so it's still pretty
6 good.
7
8 I think that these results indicate that the combination of
9 empirical dynamic modeling, with the SEAMAP survey, gets us a
10 pretty good handle on predicting abundance for shrimp a year ahead,
11 which could be useful for either index-based management or possibly
12 for setting new management reference points, and so our next step
13 -- We haven't done this for shrimp yet, but our next step is to
14 evaluate -- Is to use EDM to define reference points, and then
15 potentially to determine stock status.
16
17 The idea here is that we would expand our delay embedding model to
18 include not just lags of abundance and temperature, but also lags
19 of catch, and then, if we do that, we can solve with -- Once we
20 fit that to the available data, we can solve for steady state, and
21 we can fix catch at some level and find the steady-state biomass
22 that is the most consistent with that catch, and then can vary
23 catch along the grid, and the answer ends up being a plot that
24 looks like this, and this thing on the right here is results from
25 a simulation, where, importantly -- Since it's a simulation, we
26 know what the right answer is, and so the black line is the true
27 MSY for our simulation, and our EDM-based estimate for that is
28 right here, and so that's pretty accurate.
29
30 Then to determine stock status, once we've estimated our reference
31 points, we just ask whether our predictions are above or below,
32 and, at least in a bunch of simulations that we've done so far, we
33 get correct status about 80 percent of the time, doing it this
34 way, and so I think that it seems like this is a reasonable next
35 step for shrimp. I came to hear what you guys have to say, but,
36 before that, let me turn the mic back over to Michelle, so that
37 she can wrap things up.
38
39 **DR. MASI:** Thanks, Steve, really for that great overview of EDM
40 and how it's being applied to shrimp, but, most importantly, thanks
41 for joining us today from California. On this slide, I want to
42 just summarize our conclusions and next steps, before we move to
43 discussion.
44
45 Following the data working groups, the preliminary findings show
46 that data limitations for penaeids suggest that age-structured
47 models aren't appropriate and aren't responsive enough for an
48 annual crop. Our research, to-date, suggests EDM is a viable

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alternative for assessing brown and white shrimp stock dynamics, with the intention of using these models to derive annual SDC, and so our next steps are to derive SDC for brown and white and then provide an update to the SSC later this year.

Of course, we do intend to put these through thorough peer review. Right now, we actually have a manuscript submitted for publication, and we also intend to review these through the shrimp SEDAR research track process, which is scheduled to start next year. Also, today, we're just requesting that the SSC provide any input on their interpretation of EDM as being an appropriate consideration for brown and white shrimp assessment models, and so, Mr. Chair, with that, I am going to open the floor up for discussion.

CHAIRMAN NANCE: Okay. Thank you. I had -- Steve and Michelle, I had one question. On Slide Number 12, and I think it's brown shrimp, and so the SEAMAP data being used -- Is it summer SEAMAP or fall or a combination?

DR. MUNCH: We did this several different ways, and I think that we eventually settled on just using the fall. Whichever one it is, it's the one that I remember the working group saying the brown shrimp are best represented in that season.

CHAIRMAN NANCE: I guess the -- Did you use the same for both brown and white?

DR. MUNCH: I am really sorry that I don't have this detail in my head at the moment, but I remember using -- We ended up using the recommendations from the working group about what was the best representation.

CHAIRMAN NANCE: Okay. Thank you. Then one last question I have. On the next steps and things, this is falling under a research-type SEDAR environment, I guess, and so are you going to have -- While you're in the development stages of these things, are you going to have involvement while you're doing this, or are you just going to in-house produce these and then bring it back to the SSC?

DR. MASI: Mr. Chair, I will start, and I will say that our intention is to bring it back to the SSC, later this year, to talk about the derivation of the SDC, if we get to that point, and I am going to open the floor to probably Katie, because I can't really speak for the intention of the Science Center and the shrimp research track process, since I'm now with SERO, and so, Katie, if you want to speak up about the involvement and how that process works, I would appreciate that.

1
2   **CHAIRMAN NANCE:** Thank you. Katie, if you're on, for sure.
3
4   **DR. SIEGFRIED:** Yes, and thank you, Mr. Chair. Our intention of
5   presenting this now is to introduce this type of modeling to the
6   SSC. We gave you a number of papers with all of your materials,
7   and you may not have had a chance to look at those, but we would
8   like you to become more versed in this methodology before we finish
9   -- Well, not we, and I'm sorry, but Michelle and Steve finish the
10 project, to get those SDCs and present them to you, maybe sometime
11 in the fall.
12
13 The intention today was to socialize this methodology with you,
14 and we would welcome involvement of the SSC, once the research
15 portion is completed, and once the research track begins, in
16 getting this ready for use in a tactical assessment. Because we
17 have white, brown, and pink, which this does not cover pink, I
18 think we're going to need all the help we can get when it comes to
19 that research track.
20
21 **CHAIRMAN NANCE:** Okay. Katie, thank you so much. Harry.
22
23 **MR. BLANCHET:** Thank you, Mr. Chairman. This is -- I have reviewed
24 a lot of the material, and, to be honest, a lot of material is
25 going to need me to read it four or five times before I really
26 understand what's going on, and so I'm going to keep it simple.
27
28 Back on your third page of your presentation, there was a comment
29 about a lack of recruitment signal, and I was wondering why you
30 were not considering the Louisiana in-shore spring shrimp
31 sampling, or summer white shrimp sampling, as an index, and those
32 have been used as indices of abundance in prior shrimp assessments.
33 Thank you.
34
35 **DR. MASI:** Harry, with that, that was actually one of the technical
36 issues that Methot pointed out, when I went and worked with him,
37 specifically. The Louisiana west index, which was used in the
38 brown and white models, is actually in conflict with the other
39 indices in the model, and so it's actually just causing delays in
40 the model and convergence issues.
41
42 We looked at, month-by-month, is there any signal from that that
43 could be used, but remember these are Gulf-wide models, and so, in
44 trying to incorporate a small west Louisiana signal as the
45 recruitment signal for the whole Gulf, it just kind of
46 overcomplicates it.
47
48 What we need, and I worked with the shrimp life history working

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1 group, is to kind of figure out how we could potentially derive an
2 index from states like Texas, Louisiana, Mississippi, and Alabama,
3 and I worked with those states throughout the shrimp life history
4 working group, and, really, the only states that are doing inshore
5 sampling is Texas and Louisiana.
6
7 As I was working through the process, I was working towards trying
8 to develop some sort of recruitment index, but, actually, in July
9 of 2021, I took a job at SERO, and so my predecessor, the person
10 that's going to take over, potentially might work down that path,
11 but, as of today, we have no recruitment signal for brown and white
12 shrimp or pink shrimp.
13
14 **MR. BLANCHET:** Well, I would agree that western Louisiana is
15 probably not the way to go, but we do have samples that are taken
16 basically from the Pearl to the Sabine, and so -- Actually, we
17 have seen a fairly good correspondence between what those samples
18 that we provide for setting the spring shrimp season and our brown
19 shrimp harvest of that season, and it's not 100 percent, but it
20 does have some predictive power on that, at least for the inshore
21 fleet.
22
23 The white shrimp is perhaps more challenging, because that's a
24 broader recruitment signal than we see in the brown shrimp, but I
25 just encourage further exploration of that, at least as far as
26 possible. Thank you.
27
28 **CHAIRMAN NANCE:** Katie, do you have anything to that point?
29
30 **DR. SIEGFRIED:** Yes, and thank you, Mr. Chair. Harry, would I be
31 able to put you in contact with Lew Coggins, our new shrimp
32 assessment scientist, to talk about that index? I think it would
33 be important not only for him to get to know you and the other
34 Louisiana folks, but also to get to know all of those data sources,
35 and not just at the data workshop, but at the research track, and
36 so would that be okay, if I put you two in contact?
37
38 **MR. BLANCHET:** Absolutely, yes. There are probably four people in
39 the state that can speak more eloquently than I can with regard to
40 those indices, but I will be glad to be a point of contact.
41
42 **DR. SIEGFRIED:** Great. Thanks, Harry. The other thing I wanted
43 to mention is, while the biology is interesting, the small-scale
44 dynamics and small-scale management that's potentially gone on
45 with shrimp -- It's all interesting, but we don't necessarily --
46
47 We were not necessarily asked to provide management advice at that
48 scale, and it's not just whether the model is representative of

1 the whole Gulf, but why shrimp, and how shrimp, are managed is
2 kind of different from the other finfish, and we don't necessarily
3 believe that everything about the stock abundance this year has to
4 do with just recruitment from last year, and so these -- The type
5 of modeling, like EDM here, may take into account environmental
6 variables that we just haven't been able to do with our other types
7 of assessments. That was just something that I wanted to add to
8 that, but I will go ahead and put Lew in contact with you and the
9 other Louisiana folks. Thanks.
10
11 **DR. MASI:** Mr. Chair, if I can just respond real quick to Harry?
12
13 **CHAIRMAN NANCE:** Yes, you may. Thank you.
14
15 **DR. MASI:** Okay. Thank you. Actually, Dr. Munch and I applied
16 for funding this year to use the state inshore survey data,
17 including the Louisiana data, and the idea there was to be able to
18 derive the recruitment indices. We didn't get funding for it, and
19 it was internal funding, this year, but, of course, that's
20 something that was very interesting to me, and I actually have
21 communicated with Jason Saucier from Louisiana, and he was
22 extremely helpful in working with me to try to derive not just a
23 west Louisiana index, but a Louisiana-wide index, and also a west
24 and an east, and so I have all of that.
25
26 I have worked with them, and it's sitting there ready to go, and
27 it's just testing different configurations of an age-structured
28 model, if we went that route, but thank you for that comment.
29
30 **MR. BLANCHET:** Who is Jason Saucier?
31
32 **DR. MASI:** Jason Saucier is from the Louisiana State -- I am
33 forgetting the name of the state department, but he works there,
34 and he's the one that was always providing the west Louisiana index
35 for the SS models.
36
37 **CHAIRMAN NANCE:** I think Jason is from Mississippi, isn't he? I
38 think you were dealing with Joe West, if I'm not mistaken, from
39 Louisiana.
40
41 **DR. MASI:** Maybe you're right. I'm sorry. I am probably getting
42 the names wrong. It's been a while. Thank you.
43
44 **CHAIRMAN NANCE:** Harry, I think that's who Michelle was talking
45 with, is Joe, for Louisiana.
46
47 **MR. BLANCHET:** Okay. Well, obviously, Payton Cagle would be the
48 appropriate person, or Joe West, for Louisiana.

1
2   **CHAIRMAN NANCE:** Okay. Katie, can you -- Who is the new shrimp
3   biologist for the Center?
4
5   **DR. SIEGFRIED:** His name is Lew Coggins.
6
7   **CHAIRMAN NANCE:** Okay. Thank you.
8
9   **DR. SIEGFRIED:** He actually was an assessment scientist at the
10 Beaufort Lab for about four years before he moved onto other
11 natural resource management, and he's back.
12
13 **CHAIRMAN NANCE:** Okay. Thank you. Trevor.
14
15 **MR. MONCRIEF:** Sorry. I had to log-off and go to another call,
16 but I am back, and I'm unmuted now. Jason Saucier works for our
17 department, the Mississippi Department of Marine Resources, and
18 he's shrimp director, and I was going to bring up the same points
19 that Harry brought up with the state surveys, and I know it's a
20 small scale, but we've definitely seen the pattern with the
21 freshwater events that we've had to deal with for the last few
22 years.
23
24 We have definitely been able to see that pattern carry out between
25 our sampling and what's actually being produced across the fishery,
26 and my comment was more that I wanted to take this back a step,
27 and forgive me if this is a little bit naïve, in the sense of
28 trying to understand the shrimp fishery the best I can, but, if I
29 think about it through the past, through the 1990s and everything
30 else, the areas of high exploitation and the larger fleet and what
31 I've seen in our state over the last decade, are there really --
32 Are there resources associated with this stock that requires it to
33 be annually evaluated, or is this more trying to assign an SDC to
34 this stock, just to have something to be able to monitor over time?
35 I guess what I'm asking is are there pressing resource issues
36 associated with these stocks?
37
38 **DR. MASI:** I can take that one, and so I think, to date, we haven't
39 seen any issue of overfishing with these stocks, and the reason
40 that they're annually assessed is just, as you said, it's sort of
41 a monitoring of the stock, which, you remember, they're an annual
42 crop, and so I think -- I wasn't around at the time, but I imagine
43 the management was put into place so that they could take a look
44 at it every year and just ensure no overfishing was occurring. I
45 am guessing Dr. Nance, who is the Chair, could probably speak to
46 this better than me.
47
48 **CHAIRMAN NANCE:** Michelle, you did well.

1
2   **DR. MASI:** Thank you.
3
4   **CHAIRMAN NANCE:** Thank you, Trevor. Dave, please.
5
6   **DR. CHAGARIS:** Thank you, and, Michelle, great presentation, and
7   I think this is all really exciting, and I think it's definitely
8   a good idea to move away from age-structured models for shrimp,
9   obviously, for all the reasons that you stated, and I do think
10 that EDM is an appropriate tool.
11
12 There's a student working in my lab who has been using EDM for a
13 different type of question, but, through that process, we did a
14 little simulation test, with data simulated by the ecosystem model,
15 and it performs -- What we learned is that it performs best at
16 lower trophic levels, which is good for the shrimp application,
17 but it also would tend to produce maybe some spurious correlations
18 for upper-trophic-level species, especially those that have more
19 trophic pathways, but I don't think that would be necessarily an
20 issue here with shrimp.
21
22 I do think that it's a good way to go, but I would also -- Just,
23 to Harry's comment, it is one of the hardest things to wrap your
24 head around, I think, EDM, and the fact that it is equation free
25 is -- It definitely feels like more of a black box than what we're
26 used to seeing, and so I would just encourage you guys to think
27 also about developing some other simple models to run alongside of
28 this, like just some simple biomass dynamic models, but if that
29 could be compared and contrasted, and I think, as you bring
30 something new like this to the SEDAR process, or even to the SSC,
31 it's good to have a suite of tools, maybe for comparison, and so
32 I would maybe consider that, going forward, and whether that would
33 be you or Lew or whoever is part of that process.
34
35 Then the other just comment I had about environmental variables is
36 I think you can throw a lot at EDM, and I would -- Because there
37 is no mechanistic formulation within EDM, and it's just sort of
38 these lag correlations and regressions, I would try to think about
39 the mechanisms of why you would include a particular environmental
40 index, because, if you're just taking like the annual average
41 temperature, and it might be the temperature two months prior, or
42 salinity, but just to try and -- You can use it to understand a
43 little bit more what might be happening.
44
45 Anyhow, those are just some suggestions, and I am excited to see
46 where this goes, and I think that EDM is slowly getting into
47 fisheries a little bit more, I believe, and it's actually part of
48 the recruitment forecasting in some of the other age-structured

1   models, and so I do encourage the committee to try to read up and
2   try to understand a little bit about EDM, because it might be
3   something that we'll likely see more of in the future, and that's
4   all. Thank you.
5
6   **CHAIRMAN NANCE:** Thank you. Katie, I think you're --
7
8   **DR. MASI:** Mr. Chair, can I just respond to Dave's comment, real
9   quick?
10
11   **CHAIRMAN NANCE:** Yes, you may.
12
13   **DR. MASI:** Thanks. I just wanted to say, first and foremost, hi,
14   Dave, and thank you for those comments. They were really great.
15   I wanted to just highlight, and I don't think it was mentioned,
16   that we actually used the SEAMAP data in situ environmental data
17   that was collected with each sample, and so it actually is like
18   the real-time with the collection of the shrimp environmental data,
19   and I think Steve could probably speak to this better than me,
20   since he was working on the analysis more than I, but I believe we
21   found that the environmental correlates really were not -- They
22   didn't improve the overall fit that much more, but incorporating
23   them, of course, gets us one step closer to the EBFM initiative,
24   and so, even though it wasn't much more, we thought that -- For
25   white shrimp, I think it was that temperature was found to be
26   important in that model, and that was the reason why we left that
27   one in there, but I think maybe Steve wants to speak to it a little
28   bit better than I. Go ahead, Steve.
29
30   **DR. MUNCH:** I think it's probably worth noting that what we're
31   doing is a little bit different than the sort of off-the-shelf EDM
32   stuff that folks are applying through our EDM, and, specifically,
33   we're using this Gaussian-process-driven EDM, which has built in
34   an automatic relevance determination prior, and so it tends to
35   select out things that are irrelevant, and we've tried this on
36   many, many, many time series, and it does actually a much better
37   job of identifying what the relevant inputs are than either CCM or
38   the other sort of things in our EDM toolbox.
39
40   **DR. CHAGARIS:** Mr. Chair, if I could follow-up?
41
42   **CHAIRMAN NANCE:** Go ahead, Dave.
43
44   **DR. CHAGARIS:** Thank you for that explanation, and I wasn't quite
45   aware, and I could tell you guys were doing something different,
46   and so, yes, it sounds like you're using the temperature collected
47   at the site, whereas what I was talking about is trying to
48   understand more about the process and the mechanism, which might

324

1 be driven by larger environmental conditions, or variables that
2 could be considered, and I am -- It got me thinking, when you
3 mentioned the site-specific data, that there is other species
4 collected in that trawl, and I'm wondering if you have considered
5 any multispecies interactions, as far as if you had high predator
6 biomass in the trawl, and could that be another variable that you
7 could add into this.
8
9 **DR. MUNCH:** That was something we talked about, but we haven't
10 tried yet, and I would definitely be keen to do that, and, if
11 you're interested more in the sort of technical stuff too, I'm
12 happy to chat more offline about how we're doing it, but I didn't
13 think it was relevant for this group.
14
15 **DR. CHAGARIS:** Okay. Very good. Thank you.
16
17 **CHAIRMAN NANCE:** Thank you, Dave. Just, while we're on that
18 subject, I think it's -- While you've collected the shrimp and the
19 temperature at the same point, the shrimp that are there may have
20 been influenced two months before by some temperature or variable,
21 and so I think it may be good to look back a couple of months, in
22 different -- Inshore and those types of things, that you may find
23 a pattern. Katie, I think you're still on, but I was just going
24 to check and see if you wanted to say anything.
25
26 **DR. SIEGFRIED:** It's an old hand. Thanks, Mr. Chair.
27
28 **CHAIRMAN NANCE:** Okay. Thank you. Just checking. Benny.
29
30 **DR. GALLAWAY:** Thanks for the presentation, and it was very
31 informative and nicely done. As I have stated before, what I am
32 concerned about is, in the 1970s, the shrimp fishery was recognized
33 as the most important fishery in the Gulf of Mexico, and research
34 centered on shrimp biology and what would you need to know in order
35 to manage shrimp, and Galveston was the center for those
36 activities, and a lot of people began their careers, like our
37 chairman, for example, during those days, and it seems, to me,
38 that all of those historical participants in shrimp fishery biology
39 and management research and management are now -- Everyone is new,
40 and I am concerned that a lot of the old information may not be
41 appropriately carried forward with the development of new
42 management criteria.
43
44 I think it would be worthwhile, and I think I will volunteer our
45 chairman to be a part of your committee and work directly with
46 you, so that the -- What I am saying is I think some members,
47 especially people like our chairman, should be involved in a
48 transition period, as we move from what has been to what is going

1 to be, and to make sure that we're not recreating the wheel, in
2 some circumstances, or getting it wrong in others, and that we go
3 forward to make sure that whatever we come up with is better than
4 what it has been in the past.
5
6 My main point is I would like, Mr. Chairman, to see some SSC direct
7 involvement in the development process, rather than coming in and
8 asking to review it at the end, and I would suggest that you would
9 be the ideal person to be part of that group, developing that, and
10 so, like I say, I am concerned about integrating the past and the
11 future and making sure that we don't lose that information that we
12 already have. Thank you.
13
14 **MR. RINDONE:** Mr. Chairman, that's called volun-told.
15
16 **CHAIRMAN NANCE:** Thank you, Benny. I would be happy to work.
17 Katie, if you need any input, please reach out, and I would be
18 happy to help. Mike Allen.
19
20 **DR. ALLEN:** Thank you, Mr. Chairman, and thank you, Michelle and
21 Steve, for the presentation, and I am learning about this too, and
22 it's relatively new to me, but I think it's a very exciting
23 approach, and the meta-analysis that's in the fisheries paper,
24 using the Ransom Myers database, is really compelling. I mean, it
25 performed really well across a wide range of fish families, which
26 is encouraging.
27
28 I guess my question is the next steps here, and how do you foresee
29 using this approach and the time series predictions that it's going
30 to give for the future, and how would you use those to develop
31 reference points, or status determination, and like what is the
32 plan to bring that in, because I guess I'm in the -- I am biased,
33 a bit, from a long history of using population models, and I can
34 clearly see how you determine reference points from those, but
35 what would be the next steps here for those kind of status
36 criteria?
37
38 **DR. MUNCH:** May I? The idea is to do exactly the same thing that
39 we would do is we had equations. If you think about what we
40 normally do when we have say a biomass dynamic model, and we're
41 trying to set MSY, we set it to steady state, and we vary either
42 the effort or the catch, until we find an estimate that produces
43 the maximum sustainable yield, and we can do exactly the same thing
44 with the EDM models.
45
46 We just don't have an equation, and we just do it all numerically,
47 and, frankly, that's what we do with sufficiently complicated age-
48 structured models anyway, and so there is, conceptually, no

1 difference, and we find that it actually works very well across a
2 wide range of simulations.
3
4 I think at least one of the papers that is included in the
5 admittedly overlarge pile that I sent to you guys does evaluate
6 not just the steady state estimates, but it also combines the EDM
7 stuff with dynamic programming, to identify optimal control rules
8 for management, and so the mathematical tools for doing this are
9 actually all very well developed already, and we just have to apply
10 them to shrimp.
11
12 **DR. ALLEN:** Okay. Excellent. Thank you.
13
14 **CHAIRMAN NANCE:** Thank you. Katie, I saw your hand go up.
15
16 **DR. SIEGFRIED:** Thanks, Mr. Chair. I can't answer about the
17 technical details, of course, any better than Steve can, but I did
18 want to address that a bit, as well as Benny's comment about making
19 sure we don't lose the institutional knowledge of the shrimp
20 fishery.
21
22 First, to the point that Steve started with, the technical details,
23 because this -- We don't see a huge effect of fishing on the status
24 of the stock with the current modeling that we have going, and we
25 don't expect to see that going into the future, but we still need
26 the status, in order to meet our Magnuson requirements, and so,
27 really, what we're trying to do is create a more versatile, sort
28 of nimble modeling approach that provides timely advice.
29
30 By doing what Steve and company are doing, we can actually free up
31 some operational research time, so that we can better address what
32 is really happening in the shrimp fishery that our past analysts
33 really haven't had time to do, like look at the effect of market
34 prices, the effect of fuel prices, those sorts of economic models
35 that really are appropriate for shrimp, and so that's the plan
36 forward, is just to provide more nimble catch advice with this
37 versatile model in real-time.
38
39 I mean, all of the technical details that Steve and company have
40 come up with are much better suited for shrimp than I have seen
41 for other models that have been used to manage the species in the
42 past, and we certainly can use your help, Chairman and Benny, to
43 contribute to our research track, and I think that the council is
44 going to appoint folks to participate, and we will reach out if we
45 don't think that somebody that should have been on the list is on
46 the list, because we do want a good transfer of knowledge, and a
47 maintenance of knowledge. I know that Mike Travis will be
48 potentially -- He keeps threatening to not be available sometime

1 soon too, and so we do have a lot of institutional knowledge that
2 we need to pass on. Thanks.
3
4 **CHAIRMAN NANCE:** Thank you, Katie. Mandy.
5
6 **DR. KARNAUSKAS:** Thanks, Mr. Chair. Thanks to Michelle and Steve
7 for a really great presentation, and I'm really excited to see
8 this work. I have worked with EDM, as you guys know, and I think
9 that the application to shrimp is a really good one, a really
10 necessary one, and so, again, I'm really happy to see the work,
11 and it looks like a really promising method to be applied.
12
13 I did have a question, along the lines of Dave's question with
14 regard to the environmental variables, and I was curious if you
15 had looked at different temporal scales and if you've looked at
16 like daily, monthly, annual averages, for example, of temperature
17 and salinity and DO, and, to Benny's point, I think that's where
18 some of this historical knowledge on sort of the mechanisms could
19 potentially be incorporated into the models.
20
21 I also wanted to just touch on the methodology is quite different,
22 and it can appear to be a black box, and I have gone through the
23 painful learning process of trying to wrap my head around these
24 models, and, if folks are interested, I am happy to share some of
25 the papers that I found to be particularly useful, as sort of a
26 traditional stock assessment biologist, in sort of making that
27 leap into understanding the methodologies.
28
29 I think, when you wrap your head around it, it's really quite
30 simple, and you are just using the behavior of the past to predict
31 the future, and you're just looking for similar patterns in the
32 time series and then saying, okay, if this happened in the past,
33 and we saw this response, and we see this same occurrence now, and
34 then we expect the same thing to happen in the future, and so it's
35 actually, I think, very sensible, when you think about it, but,
36 anyway, I'm happy to share or have discussions with folks on that.
37 Thank you.
38
39 **CHAIRMAN NANCE:** Mandy, thank you so much. Jess, any other hands?
40 Harry.
41
42 **MR. BLANCHET:** You knew I would be back, I'm sure. Bad pennies.
43 The two questions -- Or a comment and a question. I would very
44 much be interested to have Mandy share those papers that she
45 mentioned just now, but, more on a procedural point, the point was
46 made earlier that this has to be provided early in the year, and
47 that prevents the use of the most recent landings data.
48

1 I am not quite sure if the council couldn't consider this later in
2 the year, and I understand what they're trying to do with the Texas
3 closure, but I don't know if that is necessarily bound up with the
4 shrimp stock status determination, and so, to me, that seems to be
5 more of a management action and not necessarily dependent upon the
6 outcome of the assessment.
7
8 It seems that, if this could be including an additional year's
9 data, if the information were provided, perhaps, mid-year or later,
10 that might be more useful to the council in working through its
11 consideration of status of shrimp, while you could use other
12 information, outside of a stock assessment process, to evaluate
13 the need for the management actions that the council might be
14 taking, and so, to me, that seems -- Why we need to provide --
15 That time of year, why we need to provide a stock assessment to
16 the council, and it seems to be limiting the timeliness of the
17 information that can be provided within that assessment, and there
18 may be a better way to skin that cat, and so maybe that might be
19 something that, as the Chairman, you might toss out, in your
20 discussions with them. Thank you.
21
22 **CHAIRMAN NANCE:** Sure, and I agree that -- Go ahead, Michelle.
23
24 **DR. MASI:** I was just going to respond, real quick, to Harry's
25 comment, and so I appreciate the comment, Harry. First of all,
26 just note that, if we push back the assessment timeline, and, of
27 course, we have to go to the March meetings for the Texas closure,
28 as you mentioned, but, if we push back showing the age-structured
29 model outputs towards later in the year, the end of the year, we're
30 still losing that more timely information that we could gain from
31 the EDM model outputs, because we would have the SEAMAP data at
32 the close of the year, and I think they run that one in the fall,
33 and so we would be able to produce these model outputs at the end
34 of the year, essentially, to have basically real-time information
35 to be able to go to the council with, but, I mean, that is just
36 one issue in the whole story, right, and so there's a number of
37 technical issues.
38
39 The reason that we wanted to move away from those age-structured
40 models is that they were all -- Of the different technical issues
41 among them, and so, considering that, we still need to find an
42 alternative to those historic age-structured models, even if the
43 council wanted to consider having some sort of assessment model
44 output.
45
46 The other value of EDM that we really haven't touched too much on
47 is the potential to be able to forecast further into the future,
48 and maybe we're providing some sort of input on six months into

1 the future and what abundance looks like for that, because we do
2 have good prediction capability, and so those are my comments, and
3 so I don't know if Katie or Jim wanted to add anything to that.
4
5 **CHAIRMAN NANCE:** No, and I was just going to say that the Texas
6 closure and the assessments were all tied together, but certainly
7 the Center and the council could come to some consensus on when
8 different things were due.
9
10 **MR. BLANCHET:** I mean, it seems that they have continued to be
11 able to do a Texas closure, over the last couple of years, without
12 an assessment at all, and so I don't know that the two are
13 necessarily linked, and I was just trying to see if there was a
14 method by which we could provide a more timely assessment, and, if
15 we can do it all with SEAMAP, and not have to touch landings data,
16 then yes, but, you know, it's -- Different models have different
17 benefits. Thank you.
18
19 **CHAIRMAN NANCE:** Thank you, Harry. Just a quick question, as far
20 as is pink on track to do something with, and, also, is royal red
21 being changed at all, or is it going to stay with its current
22 methodology?
23
24 **DR. MASI:** I can respond to that, and so, on royal red, just note
25 that that was never an SS model, and I know you know that, Jim,
26 but for everyone else, and that one is actually just based on
27 tracking landings in relation to the ACL, and I think that's
28 staying as it is, because there is no more information to develop
29 a model for that.
30
31 There is also probably not a long enough time series, and so we
32 could produce an EDM for royal red, potentially, assuming there
33 were enough data points in that series, but I don't know that it
34 would be much better than the current methodology, without really
35 looking into it.
36
37 For pink shrimp, the issue that we had is there's not enough points
38 in the time series from the SEAMAP trawl survey, and Steve touched
39 on it briefly, when he talked about Stat Zones 1 through 8, and
40 the SEAMAP trawl didn't actually move over to the West Florida
41 Shelf until -- I think it was like 2008 or 2009, and Adam Pollack
42 is on the line, and he can correct me, and so the issue there is
43 that we just haven't acquired enough years in order to be able to
44 use the EDM for that, and Katie mentioned that, given that we don't
45 have the ability to use EDM for pink, that's one of the main
46 reasons that we need all the penaeids to go through the research
47 track process, because we need to come up with some sort of a
48 method for pink.

1
2   **CHAIRMAN NANCE:** Okay. Thank you. Katie.
3
4   **DR. SIEGFRIED:** Thanks, Mr. Chair. I mean, it's another piece of
5   institutional knowledge, is Michelle. I mean, she sounds like
6   she's still a shrimp analyst, but she is in a different job, and
7   so we are going to have to somehow move along to these assessments,
8   now that she's at SERO, and, honestly, I'm not sure about pink
9   yet, and, I mean, it's unusual to do three species in one
10 assessment with one person, and we're going to have to figure out
11 what to do with that, and so that's the honest answer, is we're
12 not yet sure about pink.
13
14 As far as -- There was something else that I was going to comment
15 on. Oh, it was the stuff that Harry Blanchet was bringing up, as
16 far as trying to find a way to get the right timing for the products
17 that the council needs to manage the stock, and we're in a state
18 of flux when it comes to shrimp with the Center.
19
20 Our data is moving around, and our analysts have changed, and we're
21 set up to do a research track soon, and, I mean, we're at a really
22 good point right now to reconfigure the way that we provide this
23 information, and we would like to talk more with the AP, coming up
24 soon, and then, also, through you all to the council about the
25 best way to provide that advice, because we just haven't been able
26 to do it with the models that we have going now, and so this is a
27 good time to change the timing for all of that, and so we're open
28 to all of that input.
29
30 Then I see Leann's hand is up, and that's good, because, at the
31 AP, we can talk quite a bit about this, in a couple of weeks, and
32 we're hoping that maybe we can get some movement from the council
33 through the AP as well, but I will go ahead and stop there. Thanks.
34
35 **CHAIRMAN NANCE:** You're very welcome, Katie. Leann.
36
37 **MS. LEANN BOSARGE:** Hello, Mr. Chairman. It's good to hear you
38 all's voices. I was just going to say that I really enjoyed the
39 conversation thus far, and I think it's been extremely beneficial
40 and helpful for me to kind of get my feet wet and understand this
41 new model a little bit better.
42
43 My question is around this idea of the involvement of some SSC
44 members, the volun-tolders, I think is what Ryan called them, and
45 so Dr. Nance and I guess possibly Dr. Gallaway or Mr. Gregory, but
46 so, obviously, I can foresee you all being part of that research
47 track, which, on the screen, shows as starting in 2023, but I just
48 wanted to make sure that did formally also have that discussion

1 about you all being part of the bullet right above that, where it
2 says "derive SDC for brown and white shrimp and provide an update
3 to the SSC in late 2022".
4
5 I just want to make sure that we are going to try and involve some
6 of that institutional knowledge, and historic knowledge, working
7 with Dr. Lew, and I'm sorry, Lew, that I don't have your last name
8 quite right yet, and I think Coggins, but I can't wait to meet
9 you, but, anyway, with him and whoever else, Katie and whoever
10 else in the Science Center that are going to be working on this,
11 that we are going to have that formal involvement from the
12 volunteers too, right?
13
14 **DR. SIEGFRIED:** Mr. Chair, can I speak to that?
15
16 **CHAIRMAN NANCE:** Yes, Katie, please.
17
18 **DR. SIEGFRIED:** Thanks, Leann, and, yes, of course. Our goal is
19 to have the SSC review all of the results of this research, every
20 step along the way, and I am not opposed to sharing that in between
21 SSC meetings, and we have manuscripts that we can share, but I do
22 think that this type of modeling is complicated enough that it
23 will take some time to absorb, and I'm still learning it too, and
24 so I'm very happy to involve everybody along the way.
25
26 I'm not sure that like the technical team -- I am not sure how
27 much they want to participate in the actual technical modeling,
28 but we are happy to provide updates along the way, in between SSC
29 meetings, yes.
30
31 **MS. BOSARGE:** Mr. Chairman, can I follow-up, real quick?
32
33 **CHAIRMAN NANCE:** Yes, you may.
34
35 **MS. BOSARGE:** Katie, I am kind of -- I'm a little worried about
36 maybe, if we don't have that historical knowledge in the room, as
37 you're actually developing some of this, and going into some of
38 the assumptions, and let's make sure that we get some pretty strong
39 relevant outputs on the frontend, rather than having to do it
40 twice.
41
42 I mean, I heard you mention a prior for relevance, as far as these
43 environmental variables are concerned, and I saw where you had
44 salinity in there, and I just think sometimes that little things
45 like that, and so rain and salinity might mean the same thing to
46 some people, but, for shrimp, I think that you actually could
47 probably look at rainfall during certain months of the year, and
48 that will be much more highly correlated with certain things, as

1 a predictor, as opposed to maybe salinity, but that's just one
2 example, and I think it is going to be very important to have that
3 historical knowledge in the room, as you're developing this, and
4 it's important to me, as part of the industry.
5
6 I mean, you're talking about trying to derive the status
7 determination criteria for shrimp, and, you know, we may not have
8 quotas, and the forecasting isn't quite as important for us, right,
9 but, however, those status determination criteria are, and we don't
10 want to see ourselves end up in a spot where maybe one assumption
11 was a little off, and we end up with something on paper that shows
12 us as overfishing, when maybe that's not indeed the case, and so
13 I hope you will involve them on the frontend and not just in the
14 review process.
15
16 **DR. MASI:** Mr. Chair, if I can follow-up, real quick? Katie, if
17 you want to go first, go ahead.
18
19 **DR. SIEGFRIED:** I was just going to say that we agree that it's
20 important to involve everyone with the knowledge along the way.
21 However, EDM is a dynamic -- We can change the way that we use the
22 modeling even after a manuscript is produced, and so, even at the
23 research track phase, and, I mean, this is something that we assume
24 that Luke Coggins is going to be well-versed in and capable of
25 running by the time that the assessment comes around, at which
26 point we can run it lots of different ways. I am not opposed to
27 involving people now, in the near future, and in the long-term.
28 Go ahead, Michelle.
29
30 **DR. MASI:** Thanks, Katie. First of all, hi, Ms. Bosarge, how are
31 you, and it's good to hear your voice. I just wanted to clear up
32 a little bit of understanding about the EDM process, and Steve
33 could probably talk better to this, and so I will start and have
34 him come on afterwards, if that's okay, but I would like to do it
35 here, while, Leann, you're on the call, and while Steve is on the
36 call, because he won't be on the call for the Shrimp AP.
37
38 With the EDM modeling, remember that it's implicitly accounting
39 for those other variables, and remember that we're looking at time
40 lags throughout the model, and we're predicting next year's
41 abundance, and so, in this particular instance, we're using SEAMAP
42 data, which looks at the essential adult population and the
43 temperature and salinity associated with the adult individuals.
44
45 Part of the process where I was looking to get some funding to
46 look at the juveniles is that we would expect that the juveniles
47 inshore are going to be -- Their abundance is going to be based
48 more on environmental processes, right, and so things like

1 temperature and salinity and rainfall and things like that are
2 going to be the dynamics inshore that are going to drive abundance
3 next year, but we are capturing that in the EDM, based on how the
4 model is capturing those time lags and implicitly accounting for
5 the juveniles in the next year's prediction. Steve, if you want
6 to make that more clear, feel free.
7
8 **DR. MUNCH:** I actually thought that you did just great, Michelle,
9 and, yes, the salient point is that the dynamics for the system
10 are captured in the lags, and including other things often helps
11 improve prediction accuracy, to some extent, but, a lot of the
12 time, if you have a long enough time series, it really doesn't
13 change things very much.
14
15 For shrimp, where we don't have very, very, very long time series,
16 including relevant drivers is probably useful, and I am game to
17 have anybody tell me what to put in there. That seems like a good
18 idea.
19
20 **CHAIRMAN NANCE:** Thank you very much. Any other input from the
21 SSC? We greatly appreciate this presentation, and I was well
22 informed, and I appreciate having both of you here and on this
23 talk with us.
24
25 **DR. MUNCH:** Thank you for having me.
26
27 **CHAIRMAN NANCE:** Let's go ahead, and I guess we'll move on to our
28 last item, which is Public Comment. Any individuals from the
29 public that would like to comment at this point, we are certainly
30 willing to take that now. Bob Zales, please.
31
32 **PUBLIC COMMENT**
33
34 **MR. ZALES:** Again, I appreciate you all's discussion over the past
35 few days, and especially on the red snapper thing, and that was
36 very interesting, and it's going to be interesting to see how the
37 council reacts to this and what their discussion is going to be
38 with it, because it appears, even though the Great Red Snapper
39 Count, and I appreciate all the hard work that those people did on
40 that, and the money that was spent, because it clearly was an
41 extensive study, and I guess it is showing us a different way to
42 look at things, but, at the same time, the downside of that was
43 when it was finished up and they came out and told the world about
44 all these red snapper, and everybody got all excited, and now the
45 reality is hitting, and so we'll see where all that goes.
46
47 The little bit of an increase that you all are recommending I think
48 is going to be reasonable, and we'll see where that goes, because

1 that will give us an indication on how those fish are caught and
2 prosecuted, and hopefully they will be, which would indicate the
3 stocks can handle it, and, if they can't, then it shouldn't be too
4 much of an overrun to pull back and redo the thing.
5
6 I just wanted to say thanks again for all the discussion, and I
7 appreciate the social and economic discussion that was in there
8 the other day, because clearly, as I have discussed before, the
9 social and economic impacts on regulations that it has on the
10 stakeholders that are out there are significant, and clearly the
11 standards require some consideration of those impacts when they
12 are making regulations. Thank you all again, and you all did a
13 good job, and we'll see you later.
14
15 **CHAIRMAN NANCE:** Bob, thank you very much. Any other public
16 comment? Okay. I appreciate everyone's attendance from the public
17 and SSC members and everyone else. It's been a good three-day
18 discussion, and I will point out that, you know, I greatly
19 appreciate the SSC membership.
20
21 It's been three days, and everyone stayed in attendance, and
22 sometimes, back in the earlier days, we had trouble getting a
23 quorum, and so I want to say, to each of the SSC members, thank
24 you for you input, and thanks for being willing to be members and
25 reading the materials and coming to discuss, and so Ryan will be
26 sending out the meeting summary and things like that, and so please
27 go over, and, also, we're looking at having the next SSC meeting
28 probably in May.
29
30 **MR. RINDONE:** May 10 to 12 is what I am looking at, but I will
31 doodle you all for that week.
32
33 **CHAIRMAN NANCE:** Okay. We have most -- Well, I won't say most of
34 us, but there's a lot that will be in attendance the week before
35 that, at the red snapper data workshop. Harry.
36
37 **MR. BLANCHET:** Mr. Chairman, I just didn't hear -- I don't have
38 any other business, but I didn't hear you call for other business,
39 just in case someone else has any.
40
41 **CHAIRMAN NANCE:** Okay. I'm sorry. I apologize. Is there any
42 other business that we need to bring up with the SSC? Thanks for
43 the reminder, Harry.
44
45 **MR. BLANCHET:** You all keep me around for some reason, and I don't
46 know what it is.
47
48 **CHAIRMAN NANCE:** Because we like you. Okay, and so you guys all

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1  have a good rest of your day, and we'll talk with you soon.  Thanks.
2
3  (Whereupon, the meeting adjourned on March 10, 2022.)
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5                              - - -
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