

1 GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

2
3 STANDING & SPECIAL REEF FISH, MACKEREL, SHRIMP & SOCIOECONOMIC
4 SCIENTIFIC AND STATISTICAL COMMITTEES

5
6 WEBINAR

7
8 March 11, 2020
9

10 **STANDING SSC VOTING MEMBERS**

- 11 Joseph Powers.....
- 12 David Chagaris.....
- 13 Benny Gallaway.....
- 14 Bob Gill.....
- 15 Douglas Gregory.....
- 16 Jeff Isely.....
- 17 Walter Keithly.....
- 18 Kai Lorenzen.....
- 19 Camp Matens.....
- 20 James Nance.....
- 21 Will Patterson.....
- 22 Sean Powers.....
- 23 Kenneth Roberts.....
- 24 Steven Scyphers.....
- 25 Jim Tolan.....

26
27 **SPECIAL MACKEREL SSC VOTING MEMBERS**

- 28 Kari MacLauchlin Buck.....

29
30 **SPECIAL REEF FISH SSC VOTING MEMBERS**

- 31 Judson Curtis.....

32
33 **SPECIAL SHRIMP SSC VOTING MEMBERS**

- 34 Richard Burris.....
- 35 Thomas Shirley.....

36
37 **SPECIAL SOCIOECONOMIC SSC VOTING MEMBERS**

- 38 Jack Isaacs.....
- 39 Kari MacLauchlin Buck.....
- 40 Andrew Ropicki.....

41
42 **STAFF**

- 43 John Froeschke.....Deputy Director
- 44 Jessica Matos.....Document Editor & Administrative Assistant
- 45 Natasha Mendez-Ferrer.....Fishery Biologist
- 46 Ryan Rindone.....Fishery Biologist - SEDAR Liaison
- 47 Charlotte Schiaffo...Administrative and Human Resources Assistant
- 48 Carrie Simmons.....Executive Director

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OTHER PARTICIPANTS

Nancie Cummings.....SEFSC
Michelle Masi.....NMFS
Clay Porch.....SEFSC

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TABLE OF MOTIONS

PAGE 44: Motion that the updated March 2020 Gulf of Mexico lane snapper assessment using the Itarget model with FES-calibrated MRIP data is the best scientific information available. The motion carried on page 44.

PAGE 45: Motion that the updated March 2020 Gulf of Mexico lane snapper assessment using the Itarget model with FES-calibrated MRIP data is useful for management advice. The OFL using the 50th percentile of the PDF is 1.05 million pounds whole weight in landings, and the ABC using the 30th percentile of the PDF is 1.03 million pounds whole weight in landings. The motion carried on page 45.

PAGE 61: Motion that Alternative 2 reads: For reef fish stocks from Action 1 and for hogfish, where long term OY is undefined, OY, implicitly accounting for relevant economic, social, or ecological factors, would be:

- Option 2a. 85% of MSY or MSYproxy.
- Option 2b. 90% of MSY or MSYproxy.
- Option 2c. 95% of MSY or MSYproxy.
- Option 2d. (ACL/OFL) * MSY or MSYproxy; or zero if the ACL equals zero.

The motion carried on page 61.

- - -

1 The Standing and Special Reef Fish, Socioeconomic, and Coral
2 Scientific and Statistical Committees of the Gulf of Mexico
3 Fishery Management Council convened via webinar on Wednesday,
4 March 11, 2020, and was called to order by Chairman Joe Powers.

5
6 **INTRODUCTIONS AND ADOPTION OF AGENDA**

7
8 **CHAIRMAN JOE POWERS:** Good morning. My name is Joe Powers, and
9 I welcome you all as the Chair of the Scientific and Statistical
10 Committee of the Gulf of Mexico Fishery Management Council. We
11 appreciate your attendance and input at this meeting.

12
13 Notice of this meeting was provided to the Federal Register.
14 Notice was also sent via email to subscribers of the council's
15 press release email list and was posted on the website. The
16 following topics will be reviewed at this meeting: Adoption of
17 the Agenda; Approval of Verbatim Minutes from the January 9,
18 2020 Meeting; Scope of Work; Selection of an SSC Representative
19 for the March 30 to April 2, 2020 Council Meeting in Gulf
20 Shores, Alabama; Review of Gulf of Mexico Shrimp Species; Scope
21 of Work on the Gulf of Mexico Yellowedge Grouper Operational
22 Assessment; Scope of Work on the Gulf of Mexico Migratory Group
23 Spanish Mackerel Operational Assessment; Update of SEDAR 49; and
24 Discussion of Revised Optimum Yield Options in Reef Fish
25 Amendment 48 and Red Drum 5 and any other business that might
26 come before these committees.

27
28 The webinar is open to the public and is being streamed live and
29 recorded. A summary of the meeting and verbatim minutes will be
30 produced and made available to the public via the council's
31 website. For the purpose of voice identification, and to ensure
32 that you are able to mute and unmute your line, please identify
33 yourself with your full name when I call your name, and so I'll
34 be going through the list. Once you have identified yourself,
35 please re-mute your line, and, in general, in the meeting,
36 please remember to identify yourself before speaking and to also
37 re-mute your line after you finish speaking. Let me begin with
38 the SSC attendees list. Lee Anderson will not be available to
39 be here. Luiz Barbieri, are you here?

40
41 **MS. JESSICA MATOS:** No, I have not seen him come on yet.

42
43 **CHAIRMAN POWERS:** Okay. Harry Blanchet. I don't see him
44 either. David Chagaris.

45
46 **DR. DAVID CHAGARIS:** David Chagaris, here.

47
48 **CHAIRMAN POWERS:** Thank you. Benny Gallaway.

1
2 **DR. BENNY GALLAWAY:** Benny Gallaway, here.
3
4 **CHAIRMAN POWERS:** Thank you. Bob Gill.
5
6 **MR. BOB GILL:** Bob Gill, here.
7
8 **CHAIRMAN POWERS:** Thank you. Doug Gregory.
9
10 **MR. DOUG GREGORY:** Doug Gregory, here.
11
12 **CHAIRMAN POWERS:** Thank you. Jeff Isely.
13
14 **DR. JEFF ISELY:** Jeff Isely, here.
15
16 **CHAIRMAN POWERS:** Thank you. Walter Keithly.
17
18 **DR. WALTER KEITHLY:** Walter Keithly, here.
19
20 **CHAIRMAN POWERS:** Robert Leaf.
21
22 **MS. MATOS:** I have not seen him come on yet.
23
24 **CHAIRMAN POWERS:** Okay. Thank you. Kai Lorenzen.
25
26 **DR. KAI LORENZEN:** Here.
27
28 **CHAIRMAN POWERS:** Camp Matens.
29
30 **MR. CAMPO MATENS:** Camp Matens, here.
31
32 **CHAIRMAN POWERS:** Jim Nance.
33
34 **DR. JIM NANCE:** Jim is here.
35
36 **CHAIRMAN POWERS:** Will Patterson.
37
38 **MS. MATOS:** He has not logged in yet either.
39
40 **CHAIRMAN POWERS:** Sean Powers.
41
42 **DR. POWERS:** Sean Powers is here.
43
44 **CHAIRMAN POWERS:** Ken Roberts.
45
46 **DR. KEN ROBERTS:** Ken Roberts is here.
47
48 **CHAIRMAN POWERS:** Thank you. Steven Scyphers.

1
2 **MS. MATOS:** I have not seen him log in yet.
3
4 **CHAIRMAN POWERS:** Okay. Jim Tolan.
5
6 **DR. JIM TOLAN:** Jim Tolan is here.
7
8 **CHAIRMAN POWERS:** Thank you. Jason Adriance cannot be here.
9 Judson Curtis.
10
11 **DR. JUDSON CURTIS:** Judd Curtis is here.
12
13 **CHAIRMAN POWERS:** John Mareska.
14
15 **MS. MATOS:** I have not seen him yet.
16
17 **CHAIRMAN POWERS:** Kari Buck.
18
19 **DR. KARI MACLAUHLIN-BUCK:** Kari Buck, here.
20
21 **CHAIRMAN POWERS:** Jack Isaacs.
22
23 **MS. MATOS:** No.
24
25 **CHAIRMAN POWERS:** Andrew Ropicki.
26
27 **DR. ANDREW ROPICKI:** Andrew Ropicki, here.
28
29 **CHAIRMAN POWERS:** Thank you. Richard Burriss.
30
31 **MR. RICHARD BURRIS:** Rich, here.
32
33 **CHAIRMAN POWERS:** William Cagle will not be able to attend. Tom
34 Shirley.
35
36 **DR. THOMAS SHIRLEY:** Tom Shirley, here.
37
38 **CHAIRMAN POWERS:** Thank you. Leann Bosarge.
39
40 **MS. LEANN BOSARGE:** Leann Bosarge is here.
41
42 **CHAIRMAN POWERS:** Thank you. We also have Michelle Masi. Is
43 she on yet?
44
45 **DR. MICHELLE MASI:** Yes, I'm here. Good morning.
46
47 **CHAIRMAN POWERS:** Then Nancie Cummings.
48

1 **MS. MATOS:** Jack Isaacs just logged in too.
2
3 **CHAIRMAN POWERS:** Jack, can you identify yourself?
4
5 **MS. MATOS:** He still has to put his pin in for his sound.
6 Steven Scyphers logged in as well, but I cannot move him over.
7
8 **CHAIRMAN POWERS:** All right. We'll just go ahead. All right.
9 You will see on the screen there the agenda, and so the first
10 item is the review of the agenda and the adoption of that
11 agenda. Are there any suggestions for changes to the agenda?
12 If not, then is there a motion to accept the agenda as it is?
13
14 **MR. GILL:** Move to adopt, Mr. Chairman.
15
16 **CHAIRMAN POWERS:** Thank you. Is there a second?
17
18 **DR. NANCE:** Second.
19
20 **APPROVAL OF MINUTES: JANUARY 9, 2020 MEETING**
21
22 **CHAIRMAN POWERS:** Thank you. Are there any objections to
23 adoption of the agenda? If none, the agenda is adopted. The
24 next item is approval of the minutes, and we have I believe two
25 minutes that need to be approved.
26
27 First, for the Standing, Reef Fish, Coral, and the Socioeconomic
28 SSC, the basic SSC meeting that was January 9, are there any
29 suggestions for amendments or changes to the minutes? If not, I
30 motion to accept these minutes.
31
32 **MR. GILL:** Move approval.
33
34 **CHAIRMAN POWERS:** Thank you. Is there a second?
35
36 **DR. ISELY:** Second.
37
38 **CHAIRMAN POWERS:** Thank you. Is there any objection to
39 approving the minutes? If not, then there was another set of
40 minutes that we were to go through.
41
42 **MS. MATOS:** I'm not sure which other minutes we need to go
43 through.
44
45 **CHAIRMAN POWERS:** I was thinking of something else.
46
47 **MR. RYAN RINDONE:** I don't think that there's another one.
48

1 **CHAIRMAN POWERS:** My mistake. All right. Then Item III is
2 Scope of Work. Ryan, do you want to quickly outline what it is
3 that we're supposed to do today?
4

5 **SCOPE OF WORK**
6

7 **MR. RINDONE:** Sure. I can do that, and I was trying to get this
8 on before you approved the agenda, but I did want, under Other
9 Business, just to briefly talk about the National SSC Meeting,
10 if no one has a problem with that, and it will only take a
11 minute.
12

13 **CHAIRMAN POWERS:** Let's go ahead and just do it now.
14

15 **MR. RINDONE:** Okay, and so the National SSC Meeting is going to
16 be held in Sitka, Alaska from August 4 to 6, and they are
17 currently saying that they can cover travel for up to three SSC
18 members from each region. Out of the six volunteers we have,
19 the council is going to send Kai, Dave Chagaris, and Jim Tolan,
20 and, since Kai is the Vice Chair, he will serve as the lead for
21 the Gulf SSC members, but there will also be room for additional
22 SSC members and other representatives from the region, and so
23 the other three volunteers, Will Patterson, Andrew Ropicki, and
24 Paul Sammarco, if there is room for the council to send you
25 guys, the council will pay for your travel, and so make sure to
26 keep that whole week, basically, because it takes a couple of
27 days to get to Sitka and back. Leave that week open on your
28 calendars, because there is a very strong possibility that all
29 six of you will have the opportunity to go. That's all I had on
30 that.
31

32 **CHAIRMAN POWERS:** Thank you. Then the scope of work, Ryan.
33

34 **MR. RINDONE:** Sure. We will need someone to serve as the SSC
35 representative for our meeting at the end of the month in Gulf
36 Shores, Alabama. Give the light lift of this particular SSC
37 meeting, in terms of the number of things being covered, if
38 there is an SSC member that's local to Alabama, that would
39 certainly be preferable, if there's one that would like to
40 attend on behalf of the SSC, and so we'll need a volunteer for
41 that.
42

43 Then we'll have a review of the Gulf of Mexico shrimp species,
44 and Dr. Michelle Masi is on here to talk about that. We'll go
45 over the scopes of work for the yellowedge grouper and Spanish
46 mackerel operational assessments, and this is starting to get us
47 into this cycle of -- It's really getting us into that cycle of
48 operational and research track assessments, and so gag and

1 amberjack were the first ones that you guys approved, and so
2 this is a just a continuance of that new assessment approach.

3
4 The last time we assessed either of those species was quite some
5 time ago. Yellowedge grouper, that assessment has a terminal
6 year of 2009, and Spanish mackerel, I believe, was 2011. Then
7 we'll have another update on the lane snapper data for
8 determining catch advice from Dr. Nancie Cummings, and we'll
9 have a discussion about OY, as it relates to status
10 determination criteria.

11
12 **SELECTION OF SSC REPRESENTATIVE FOR THE MARCH 30-APRIL 2, 2020**
13 **GULF COUNCIL MEETING IN GULF SHORES, ALABAMA**

14
15 **CHAIRMAN POWERS:** Okay. Thank you. Then we'll move on then to
16 Agenda Item IV, selection of a representative to the council
17 meeting. As Ryan mentioned, it was my understanding that this
18 could be done by webinar, or just the date of March 30, but, if
19 somebody wants to physically be there, if they live close by, I
20 would give that opportunity. Is there any interest?

21
22 **DR. POWERS:** I could do it. My problem is that I teach on
23 Tuesday and Thursday afternoons, and so it's a good hour drive
24 for me to get to Gulf Shores, and so I could do it in the
25 mornings on Tuesday and Thursday or all day on Monday and
26 Wednesday, but I can't miss any more classes. I've been
27 traveling too much.

28
29 **CHAIRMAN POWERS:** Okay. Why don't we do this then, and I'm not
30 sure what the schedule is, and let's just say that, tentatively,
31 Sean will do it in person, if the schedule could be arranged,
32 and then, otherwise, I guess I could do it by webinar,
33 otherwise. Is that okay?

34
35 **MR. RINDONE:** That's fair.

36
37 **DR. POWERS:** That's fine with me, and, Ryan, I will send you the
38 specific times that I teach.

39
40 **CHAIRMAN POWERS:** All right. We'll work that out. All right
41 then. Review of the Gulf shrimp species, and there is three
42 presentations made by Dr. Michelle Masi, and we'll go directly
43 into those, and the actual documents have been distributed on
44 the website. Dr. Masi.

45
46 **REVIEW OF GULF OF MEXICO SHRIMP SPECIES**
47 **PRESENTATION ON BROWN, PINK, AND WHITE SHRIMP**
48

1 **DR. MASI:** Good morning. I am Michelle Masi from the Southeast
2 Fisheries Science Center, and, to start off today, I'm going to
3 be presenting the 2019 Gulf of Mexico penaeid shrimp stock
4 assessments using 2018 terminal year data, and I just want to
5 say, as a note, that, this year, I worked in collaboration with
6 the Southeast Fisheries Science Center stock assessment staff as
7 well as leadership at the Center, and specifically Rick Methot
8 himself spent a lot of time dedicated to looking at data inputs,
9 as well as model configurations, for these three shrimp
10 assessment models.

11
12 Based on the reviews over the past year, a number of technical
13 concerns have arisen among the three models, and so, today, I'm
14 going to present just a strict assessment update for all three
15 shrimp stocks, and then I will conclude with some additional
16 details on this topic.

17
18 As a reminder, these are three separate shrimp assessment
19 models, and here what I'm showing is just what stat zones the
20 models are encompassing, and so pink shrimp is encompassing Stat
21 Zones 1 through 11, and then brown and white overlap one another
22 on Stat Zones 7 through 21.

23
24 This slide is just a review of the 2018 assessment results that
25 were presented at the SSC meeting last year, and so the
26 different shrimp stocks, brown, pink, and white, are shown
27 across the rows in this table, and then the stock status
28 information is presented in the columns, highlighting, of
29 course, the SSB 2017 in relation to SSB MSY, based on last
30 year's results, suggesting that all of the stocks were well over
31 the SSB MSY threshold.

32
33 The footnotes there at the bottom of the table are showing that,
34 in Amendment 15 in 2015, we established the benchmarks, SSB MSY
35 and FMSY, based on a 2014 SS Model run, and so that's what we're
36 comparing against here.

37
38 Another thing to note in this table is a question came up at the
39 SSC meeting last year, which was why is it that white shrimp is
40 an order of magnitude larger than brown shrimp, given that we
41 know that the landings for each of these two stocks are
42 approximately equivalent and that we don't expect some portion
43 of the stock is unavailable to fishing.

44
45 The reason for that is that pink and white shrimp, as a
46 reminder, are monthly models, and so the data is input at a
47 monthly timestep, and it's also output at a monthly timestep.
48 In 2012-ish, because I don't know the exact year, there was an

1 SSC workshop that established the methodology for estimating SSB
2 and F from these two monthly models, and that was to sum across
3 twelve monthly outputs, and, in doing so, it actually
4 overinflates the SSB for those two stocks.

5
6 Now a consistent methodology was used to establish the
7 benchmarks, which was also to sum across twelve monthly outputs,
8 and so it just becomes a scaling issue, but, given that we know
9 that white shrimp should be about an order of magnitude lower,
10 as well as pink shrimp, which makes sense for pink, given we
11 know it's a smaller stock.

12
13 Now I'm going to go through the 2019 continuity models, where
14 here continuity is being used to define the historical model
15 configuration, and so the models that have been presented to --

16
17 **DR. POWERS:** I'm sorry, but I want to interrupt for just one
18 second. On the previous slide, I was at that 2012 meeting, and
19 that was viewed just as a stopgap until Stock Synthesis could be
20 programmed to deal with the monthly issue, and so my memory was
21 that it was never intended to be the future, and that we were
22 going to be able to get Stock Synthesis to give us the accurate
23 number, like brown shrimp.

24
25 **DR. MASI:** Okay. Well, at this time, we're still using that
26 methodology, and so we can talk more about it, I guess, at the
27 end of the presentation, and I guess, if I could just suggest,
28 if I could just go through the slides, and then, if anyone wants
29 to have a question, if we could please save them to the end,
30 just because of the limited time that we have today, that would
31 be really helpful. If there's something imperative though, then
32 please feel free to stop me.

33
34 Again, continuity here and historical model configurations just
35 using the updated terminal year data here, and so, for inputs
36 into the brown shrimp continuity model, we have two fisheries,
37 an inshore and an offshore, and several indices of abundance, as
38 you can see. We've got the fishery CPUE data incorporated in
39 the model, and I just want to note here that, looking at the raw
40 inputs, we do have a very low, on average, standard error
41 associated with the fishery CPUE, and that becomes important,
42 and, in a couple of slides, I will explain that.

43
44 Again, we have the SEAMAP data here, which is the full SEAMAP
45 years, and so it's 1987 to 2018, and I was informed this year,
46 from Adam Pollack, as I took over these models this year, there
47 was a substantial method change that occurred with SEAMAP in
48 2008 and moving forward, and it changed the spatial extent of

1 the sampling, as well as what depths were being sampled, and I
2 will discuss why that's important in a few slides.

3
4 Then the Louisiana west index is off the coast of Louisiana, and
5 it's supposed to be representing recruitment in this model, and
6 then we have length composition data from SEAMAP summer and
7 fall, as well as size composition data, and I just want to note
8 that the LA west is actually length composition data, and it
9 just has different bin widths than the SEAMAP summer and fall,
10 and so it's actually easier to input in an SS data file the
11 Louisiana west as a size composition, with its own unique
12 binning, instead of reworking that raw data to fit into the
13 SEAMAP bin widths.

14
15 The size composition data is the fishery data, and that's the
16 number of shrimp in each market size bin, and there's eleven of
17 them, and that's in pounds, and the years over which this model
18 spans is 1984 to 2018, with a couple of years of equilibrium
19 catch to spin up the model.

20
21 Inputs into the model, here you're looking at the overall
22 landings, and so I have combined the inshore and offshore,
23 although they are split in this model, and you can see the
24 figure on the left is showing landings, and it does show that
25 there has been a slight decline in the brown shrimp landings
26 over the span of years modeled. However, more recently, the
27 landings have stabilized.

28
29 Then you can see, in the plot on the right, the fishery CPUE,
30 noting that, in 2004 through about 2013, there was an increase
31 in the CPUE, and you can expect that, if landings have remained
32 relatively stable, but you have a decrease in effort, you would
33 see an increase in CPUE, given that CPUE here is estimated as
34 catch over effort.

35
36 I want to note that, given that CPUE is estimated as simply
37 catch over effort, we're not considering anything like the
38 changes in the fishery in the CPUE estimate. For example, there
39 was the permit moratorium that occurred in early 2000 and permit
40 attrition that has occurred since that time. We have lost about
41 a thousand permits in the fishery, which caused a decline in
42 effort, I have been informed, because of the increase in
43 efficiency in the fishery, and so the remaining permit holders
44 were perhaps more efficient than the ones that gave up their
45 permit. Also, we had the introduction of imports into the
46 market, which declined effort as well for the fishery.

47
48 If we were to look just at what the raw data is telling us,

1 here, we're looking at fishery independent data. What I have
2 done is I am just plotting the raw SEAMAP or observed data, and
3 I fit a linear trend to it, so you can get an idea of what's
4 occurring with this index.

5
6 Here, we're looking at SEAMAP fall on the left and SEAMAP summer
7 for brown shrimp on the right. As I noted, there was a
8 substantial method change for SEAMAP around 2008. However, this
9 is just the raw data that's input into the continuity model, and
10 so we're not considering that split here. If we were to look at
11 what the index is doing over the full span of years, it does
12 appear that, for brown fall, it's increasing and that, for brown
13 summer, it's increasing as well.

14
15 I do want to note that, if you split this up based on the method
16 change for SEAMAP 2008 to 2018, I do have a slide for that at
17 the end of the presentation, and you can see that, for fall and
18 summer, there is a slight decline, however noting that, of
19 course, there is that interannual variability.

20
21 Here, we're looking at outputs from the brown shrimp continuity
22 model, and this is SSB in relation to the established SSB MSY
23 threshold, and, based on the continuity run, it does suggest
24 that we're well above that threshold. The table on the right is
25 just to show the total log likelihood is relatively high.

26
27 It does suggest there is convergence issues in this model, and a
28 lot of that noise is coming from the size frequency and length
29 composition data, and that's because we're incorporating low-
30 catch months as well as high-catch months in this model, and
31 there is some other typical issues in the model as well, which
32 hopefully I'll be able to come back and discuss with the SSC
33 later this summer, or perhaps in the fall. Here, we're looking
34 at the F outputs from the model, and you can see that they,
35 based on the continuity model run, F is well below that FMSY
36 threshold.

37
38 Looking at the overall model results for the 2019 brown shrimp
39 continuity model, SSB current, or 2018, is suggested to be 46.3
40 million pounds, and the F current in relation to the FMSY, as
41 shown in the footnotes there, is well below the threshold, and
42 then, of course, bolded there for you is the continuity model
43 suggests that we're well above that SSB MSY threshold, being 7.6
44 times it.

45
46 What's driving the spawning stock biomass in this model? I
47 bring this slide up because this is a question that I was asked
48 and was brought up multiple times at the SSC, Shrimp AP, and

1 council meetings last year, where it was suggested that there
2 appears to be an environmental driver, some sort of signal
3 that's driving spawning stock biomass.
4
5 If you actually look at the CPUE index, which, again, has the
6 lowest standard error associated within the model, you can see
7 that the CPUE is actually what's driving SSB in this model.
8
9 Now we're going to go through the pink shrimp continuity model.
10 The difference between brown shrimp is that this has just one
11 fishery, and it's combined fishery. Also, you can see that the
12 pink shrimp does not incorporate the Louisiana west index, which
13 makes sense, given that we know the pink shrimp stock is largely
14 off the West Florida Shelf.
15
16 Another thing that is different is you can see there is a SEAMAP
17 summer and fall index in this model, which is the span of all
18 years, again, that fall SEAMAP index, and then the SEAMAP delta
19 log, and that's the SEAMAP delta log for summer and fall as
20 well, is just the method changed years of the SEAMAP index, and
21 I want to note that in 2008 is when SEAMAP actually started
22 sampling off the West Florida Shelf.
23
24 Prior to that, they were just sampling in the northwest Gulf,
25 and so those early years of the SEAMAP full index have very,
26 very small sample sizes. Adam Pollack, who is the developer of
27 the SEAMAP indices at the Southeast Fisheries Science, suggested
28 that those earlier years are just not very representative of
29 pink shrimp abundance, and so, moving forward, we should
30 probably just look to the delta log indices.
31
32 Another difference between pink, and I've mentioned this
33 already, is that this is a monthly model, and it's got generic
34 year codes to represent the years and the months, and so 1270
35 here is representing January of 1984, and 1274 is February of
36 1984 and so on, all the way up to December of 2018.
37
38 For inputs into the model, here we're looking at landings again
39 on the left, and you can see that landings have increased and
40 decreased over the span of years modeled. More recently 2017
41 and 2018 suggest a slight increase in the landings, back to
42 about the mid-1990s level, and then, again, showing the CPUE
43 trend on the right, 2004 to 2013. Again, here, we're seeing
44 that increase in CPUE.
45
46 If we look just to the all data inputs for the fishery-
47 independent index, which is the SEAMAP summer and fall indices,
48 here I'm just showing the method change index, and you can see

1 that pink shrimp SEAMAP fall, on the left, and, again, this is
2 with a fit linear trend, and so this is all outside of the
3 model, and there is no model fit here, it suggests that there is
4 a slight increase in the index.

5
6 If you look at the pink SEAMAP summer, it does suggest a slight
7 decline. A couple of things were noted by Adam Pollack as we
8 discussed this again a couple of weeks ago, and pink shrimp fall
9 might not actually be very representative of stock abundance,
10 given that they have funding issues in the fall, as well as poor
11 weather conditions, and so SEAMAP fall, unfortunately, isn't
12 able to get out and sample pink on the West Florida Shelf as
13 well as they could, potentially.

14
15 If we were to move forward suggesting that pink shrimp summer is
16 the more representative index, I do want to note that I did talk
17 about -- I talked to Adam Pollack, again, about this indices a
18 couple of weeks ago, and he noted that 2008 was a very, very low
19 sample year, and so, perhaps, moving forward, we would want to
20 remove that from this model. If we did that, and I have a slide
21 that shows this figure with just 2009 to 2018 as being the
22 representative index, the abundance trend appears to be
23 relatively flat.

24
25 For the continuity model outputs for the pink shrimp model, here
26 we're looking at SSB in relation to that established SSB MSY
27 threshold, and the model does suggest that we're well above
28 threshold, and, again, just showing the table on the right to
29 inform that the total log likelihood is much lower in this
30 model, suggesting, of course, few convergence issues. However,
31 it's noting that the size frequency data there and the length
32 composition is providing most of that noise, and that, of
33 course, is because we're incorporating the low catch months as
34 well as the high catch months in this model as well.

35
36 For the pink shrimp continuity outputs for F, here we're showing
37 F in relation to that established benchmark, and you can see
38 that the F current is well below the established benchmark.

39
40 As far as the stock status information coming from this model,
41 SSB current is at 39.7 million pounds, which, again, as a
42 reminder, is the sum across twelve monthly outputs, and so that
43 should be about one order of magnitude lower, if we were to use
44 an equivalent methodology to that's done in a typical annual,
45 and the F current, you can see from the footnotes there, is well
46 below the established FMSY threshold, and, of course, SSB 2018
47 is about 1.7 times the SSB MSY threshold.

48

1 Again, just to reiterate the point, what's driving spawning
2 stock biomass in this model is the fishery CPUE that's driving
3 those changes, which is clear, based on these trends.

4
5 All right, and now I'm going to go through the white shrimp
6 continuity model. White shrimp, similar to pink, has a combined
7 fishery. Of course, the difference between white and pink is
8 white is more similar to brown, in that it has the Louisiana
9 west survey incorporated in it, and then, of course, like pink,
10 the white shrimp model is the monthly model, and so we use those
11 generic year coding in this, and so 965 is representing January
12 of 1984, and so on.

13
14 For inputs into the white shrimp model, here we're looking at
15 landings again on the left, and you can see that there was a
16 slight decline in landings in the late 1980s and early 1990s.
17 Landings increased again in the early 2000s. More recently, it
18 has gone down a little bit lower, in 2018. The CPUE, of course,
19 here, again, looking at it, you can see there is an increase
20 around 2004 to 2013.

21
22 If we were to look just at what the raw or observational SEAMAP
23 data is telling us, again fitting that linear trend line to it,
24 so you can get an idea of where the direction of the trend is
25 going, looking at the full span of SEAMAP years, and so not
26 considering the method change years, and this is just what's
27 going into the continuity model, it does appear that SEAMAP fall
28 is declining a bit.

29
30 If we were to look just at the method change years for the
31 SEAMAP fall, which again is presented in a slide at the end of
32 the presentation, 2008 to 2018 does suggest a slight decline,
33 again, but again noting there is that interannual variability.

34
35 Now, speaking to Adam Pollack about the white SEAMAP summer
36 trend, we weren't quite sure what was occurring with the split
37 there, but, of course, noting that 2008 is that method change
38 year, and so, if we were to, moving forward, just look at the
39 method change years, it does look like the white shrimp summer
40 index is increasing in this figure. However, if you look at
41 just 2008 to 2018, there is actually a slight decline, but, of
42 course, noting the interannual variability in that index.

43
44 For outputs from the white shrimp model, here we're looking at
45 SSB in relation to the established SSB MSY threshold, and it
46 does predict this year that SSB is well above the SSB MSY
47 threshold, and, again, just showing the table on the right that
48 the total log likelihood is relatively high, suggesting

1 convergence issues, and then, of course, a lot of the noise is
2 coming from the low-catch months being incorporated into this
3 model as well.

4
5 Here we're looking at F outputs, and, again, F is well below the
6 established FMSY threshold, and, as far as stock status
7 information, SSB current is at 860 million pounds, again noting
8 that's the sum across twelve monthly outputs, and F current is
9 1.1, which is well below the FMSY threshold, and SSB current in
10 relation to SSB MSY -- The continuity model predicts we're at
11 2.4 times that SSB MSY threshold. Again, reiterating the point
12 that SSB in this model is also being driven by that fishery CPUE
13 data.

14
15 That concludes the outputs from these models. What I want to
16 say is just that we've made, at the Center, a significant
17 effort, working together with multiple stock assessment
18 scientists, as well as leadership at the Center, and, most
19 importantly, I worked very extensively with Rick Methot this
20 year, in order to review and attempt to improve these assessment
21 models, and, in doing so, we highlighted a number of technical
22 concerns among each of the models.

23
24 Therefore, the Center is suggesting that each of the models go
25 through a comprehensive review. It's unclear at this time
26 whether or not that review will be through a SEDAR research
27 track process or whether we do an internal Southeast Center
28 equivalent process. The reason for potentially not going
29 towards the SEDAR research track is, of course, these are annual
30 models, and the SEDAR process itself may be just a little too
31 cumbersome, given that there's three models and we need to be
32 presenting them every year. However, if we do the internal
33 process, there will be a formal review.

34
35 Finally, until this review is completed by the Center, here
36 we're just presenting a strict assessment update, in order to be
37 comparable to those established benchmarks. However, the Center
38 is not recommending that we use the continuity models this year
39 in order to update the benchmarks at this time. As a reminder,
40 Amendment 15 says that we will establish the benchmarks, which
41 we did in 2015, and then update them every five years, and so
42 this would be the year that we were intended to update those
43 benchmarks.

44
45 With that, I just want to thank everyone involved in helping me
46 understand the data inputs and the model configurations, as well
47 as technical concerns among these models, and, of course, the
48 data providers, and Adam Pollack and Joe West were very helpful

1 in getting the data to me timely and helping me understand the
2 data inputs, and then Shanae Allen from Florida Fish and
3 Wildlife for providing me with very timely diagnostic R code,
4 which was very helpful, and, of course, a special thank you to
5 the Gulf of Mexico commercial shrimp fishermen for everything
6 that they do and for providing the data inputs needed to run
7 these assessment models.

8
9 With that, I just want to acknowledge that the last three slides
10 of this presentation are those updated method change years for
11 the SEAMAP indices, and so you're welcome to look through those,
12 and that's all I have, and so I am opening the floor now to
13 questions.

14
15 **CHAIRMAN POWERS:** Thank you. Let's keep the questions to one
16 species at a time, and so let's start with the brown shrimp, or,
17 actually, a more general question I have, and this is a question
18 more for Ryan, I believe, but, if we the SSC don't do anything
19 at this meeting, basically, all the ABC criteria and things like
20 that would just remain the same, and is that correct?

21
22 **MR. RINDONE:** Yes.

23
24 **CHAIRMAN POWERS:** Okay. All right. Then, again, let's go back
25 to the brown shrimp. Are there any questions about the brown
26 shrimp?

27
28 **MR. GILL:** I have a general question that applies to all three.

29
30 **CHAIRMAN POWERS:** Okay. Go ahead.

31
32 **MR. GILL:** Actually, I have two questions that may be related.
33 Dr. Masi, you indicated that the biomass was in fact driven by
34 the CPUE, and how do you know it's not the reverse and that
35 biomass, for example, increased in the later years, and, as a
36 result, the CPUE went up even with the same effort?

37
38 **DR. MASI:** I did a sensitivity run where I turned off the CPUE,
39 and you can see that the SSB changes under that scenario.

40
41 **MR. GILL:** Okay. Thank you for that, and so the second question
42 is that I noticed the biomass of all three species followed much
43 the same pattern over the years, particularly the growth in the
44 latter years since 2004. Given the spatial differences of the
45 species, have you all looked at what the commonalities were
46 driving that result?

47
48 **DR. MASI:** Not at this time. I think your question is

1 suggesting that maybe there is the possibility of these species
2 being so similar that they should just be looked at in one
3 model, and is that what you're suggesting?

4
5 **MR. GILL:** No. What I'm suggesting is that there is various
6 factors, be it food, be it weather conditions, be it
7 temperatures, be it salinities, whatever, that are driving the
8 shrimp populations that are common throughout.

9
10 **DR. MASI:** Okay, and so, I guess to answer that question, what I
11 would say is that, given that these are Gulf-wide models, it's
12 really hard to incorporate any environmental uncertainty into a
13 model, given that, as exactly what you're saying, we would
14 expect that the growth and the mortality and the recruitment
15 would differ in different regions of the Gulf of Mexico, and so
16 at smaller spatial scales, and this is actually evident when you
17 look at the Louisiana west inshore survey.

18
19 We found this year, based on the review of the models, that the
20 Louisiana west, for every single month, is actually in conflict
21 with the other indices in the model, and this is because there
22 is such a small spatial extent of that Louisiana west survey and
23 the fact that the other indices, being that they're Gulf-wide
24 indices, are just not picking up the signal from the Louisiana
25 west index.

26
27 Moving forward, of course, we would hope that we would be able
28 to break this model, or all of these models, up into regionally-
29 distinct models, and so spatially-distinct regions. For
30 example, the brown shrimp model might be an east and west Gulf
31 model. Of course, that takes a lot of time to do, to be able to
32 split the data and create a new model, and so that hasn't
33 happened yet, but, assuming that we did that, I would think that
34 we would have a better chance at being able to incorporate the
35 environmental uncertainty, moving forward.

36
37 **MR. GILL:** Thank you.

38
39 **CHAIRMAN POWERS:** Thank you. I have a question, but I think
40 it's more of a question of Sean. What was the motivation for
41 just as an indicator of summing over the twelve months and not
42 using one particular month as the indicator?

43
44 **DR. POWERS:** We went back and forth on this for a long time, and
45 I don't remember exactly why we didn't go with the monthly. Jim
46 Nance was there as well, and he might know as well.

47
48 **DR. NANCE:** I'm going to say that I'm not sure the term "summing

1 over twelve months", because, Michelle, don't we -- Maybe my
2 memory is not doing well here, but I thought we took the
3 terminal month and timed that by twelve.

4
5 **DR. MASI:** To answer your question, Jim, you're correct that the
6 language in Amendment 15 does suggest that we're supposed to
7 have multiplied across the terminal month by twelve. However,
8 that would still inflate the value.

9
10 **DR. NANCE:** It does, yes.

11
12 **DR. MASI:** But that is not the way that it was done, and I am
13 only replicating the methodology that was used each year.

14
15 **DR. NANCE:** That's not the way? Okay, because I thought --
16 Sean, I know we went back and forth on this, and we were trying
17 to get a -- Joe, we were trying to get an annual MSY. An SSC
18 would produce a monthly MSY, and so, in order to try to get it
19 up to an annual value, we then took that terminal month, and
20 what I understood we were trying to do is take that terminal
21 month and multiply that by twelve, to give us a sense of an
22 annual MSY value.

23
24 **CHAIRMAN POWERS:** Okay. Thank you. Ken Roberts, you had a
25 question?

26
27 **DR. ROBERTS:** Yes. Thank you, Mr. Chairman. The shrimp fishery
28 is different from everything else that seems to be in the Gulf,
29 in that it produces a number of products, anything from nine-
30 count shrimp to hundred-count shrimp, and so it's always a
31 little troubling, to me, to look at something like has been
32 happening since 2008 to 2018 about the CPUE, and so I guess my
33 question is this. Is there any information available that
34 during that time period what's been happening to the size
35 distribution of the landings?

36
37 **DR. MASI:** I will answer that question as best I can. The only
38 information that we've looked at, as far as sizes in the catch,
39 were for white shrimp, where Rick Methot and myself, when I was
40 in Seattle in November -- We were actually looking at it because
41 we were finding that the indices in the white shrimp model were
42 in conflict with one another.

43
44 There is a signal in the length composition of the fishery
45 catch, and so you can see actually an increase in size, over the
46 span of all years, of the white shrimp, across all months, up
47 until about August, and we were looking at that, because, of
48 course, the CPUE used in the model is a relatively flat trend,

1 whereas you see this distinct essentially knife-edge cutoff in
2 the size of the shrimp, starting at about mid-August, and that's
3 in relation to the Texas closure, when the fishery actually
4 shifts from offshore Louisiana to offshore Texas, and so that
5 CPUE in the model isn't capturing that signal, and that was the
6 reason for looking at it.

7
8 We weren't specifically looking to see if size was changing over
9 all years, but, given that I did look at the data, I do know
10 that, on average, that trend has remained the same across all
11 spans of years, just for the white shrimp model, and I didn't
12 look at the other models yet, and so size has not changed, on
13 average, in the white shrimp model across all years.

14
15 **CHAIRMAN POWERS:** Thank you.

16
17 **DR. CHAGARIS:** Michelle, thanks for the updates, and so maybe
18 this might be a little bit more of a comment, because it sounds
19 like there's a lot of changes coming to these assessment models
20 in the future, and I'm sure this is on your radar, but one of
21 the things that stood out to me was how you're using these
22 SEAMAP indices, for example if the summer and fall, and I think
23 it was brown shrimp, the summer and fall indices, looked to be
24 highly correlated, and so you may want to pick one or try to do
25 a combined index.

26
27 Also, if you have like a summer and fall index, it kind of
28 depends on what sort of seasonal drivers you have in that model
29 that might help if there's changes or growth or something to
30 inform like composition shifts and changes in abundance and
31 things, and so it can get kind of tricky, I think, if you've got
32 these two seasonal indices in there, but nothing to really
33 inform the interseasonal dynamics, and so I guess just to think
34 about what's the plan moving forward for index selection in
35 these models.

36
37 Then I just have another comment, real quick, on Bob Gill's
38 question. We do have these shrimp species integrated into one
39 of the Gulf-wide ecosystem models that Skyler and the folks down
40 in Miami are leading, and we do tend to see that these lower
41 trophic level species kind of respond to some broad change in
42 productivity. We are typically driving the model with nutrient
43 load outflow from the Mississippi River as a proxy for
44 productivity, but there could be the potential for these system-
45 wide shifts in productivity that might be driving the common
46 changes that we see in these three species.

47
48 **DR. MASI:** Thanks for your comments, and, yes, I would agree

1 that it would be, I think, interesting to, as we begin looking
2 at data inputs and what indices might be driving SSB, to
3 incorporate, or try to incorporate, some sort of environmental
4 index into the model at that stage.

5
6 As far as what we're going to be doing as far as picking which
7 indices are most representative, I can't answer that question at
8 this time. We will be -- I have been told that we will be
9 looking at just basic data inputs into the models, which, of
10 course, would mean looking to see which indices are the most
11 representative and whether or not we need to establish some new
12 methodology, for example, like you said, combining the two
13 SEAMAP indices, and so those things are definitely on the table
14 to be done.

15
16 **DR. NANCE:** Joe, I've got a comment on that.

17
18 **CHAIRMAN POWERS:** Go ahead.

19
20 **DR. NANCE:** You know, it's interesting. For SEAMAP, for
21 example, the summer index is trying to pick up young brown
22 shrimp, where the fall is picking up the older brown shrimp, and
23 so, as we start to look at trying to combine these, I'm not sure
24 that's good, but maybe using one or the other on this, because,
25 for all these species, those two indices, the summer and the
26 fall trawl surveys, may be picking up different portions of the
27 population when they're being harvested.

28
29 **DR. CHAGARIS:** If I could just respond, that's kind of a good
30 point, and what I was sort of thinking about, Jim, was that,
31 depending on how the recruitment timing and things are set up,
32 it might be overly challenging to the model to reconcile any
33 differences between those seasons without something to inform
34 what's happening from summer to fall.

35
36 **DR. NANCE:** Yes, absolutely.

37
38 **DR. CHAGARIS:** I would think carefully about those seasonal
39 indices moving forward in those models.

40
41 **DR. GALLAWAY:** I have a question.

42
43 **CHAIRMAN POWERS:** Go ahead, Benny.

44
45 **DR. GALLAWAY:** Dr. Masi, that was a very nice and clear
46 presentation. Thank you. I am not prepared, really, to ask my
47 question, because I haven't looked at the stock assessment. I
48 am curious though, and I will look, but maybe you can summarize

1 quickly exactly how the inshore and offshore CPUEs are
2 calculated, and do either one of them have more influence over
3 the total CPUE, or how are they integrated, and, like I say, I
4 should be better prepared, but I'm not, and so if you can
5 summarize. Thank you.

6
7 **DR. MASI:** Benny, I would kind of maybe turn this question back
8 on you. Actually, the CPUE that was plotted there is actually
9 outputs from the LGL code that was developed for our Center in,
10 I believe, 2004-ish, and so the code was written such that
11 species CPUE is output from that, and so that's the Excel file
12 that I was using.

13
14 There is a slight difference in exactly what's going into the
15 model, because remember the model is using monthly inputs,
16 whereas the figure that I showed was the annual CPUE. However,
17 if you take the month -- So there's two files output from the
18 LGL code, and one is a CPUE in a monthly timestep for each
19 species and then the other is the annual CPUE for each species.
20 What I'm talking about now is the comparison of those two files.

21
22 The file of the monthly timestep is what goes into the
23 assessment models, and the annual CPUE is what I plotted, and,
24 if you look at the average CPUE across the months, for the
25 monthly CPUE file, it is actually approximately the same as the
26 annual CPUE, and so I don't know the methodology precisely that
27 was used in the code by LGL to estimate CPUE, but that is the
28 data input going into the models, essentially, and that is
29 what's being plotted.

30
31 **DR. GALLAWAY:** It's where 90 percent of the catch comes from one
32 of the target species, and it was for federally-permitted
33 vessels with electronic logbooks, and so, when I saw the inshore
34 -- It's basically an offshore with the exception of waters from
35 the -- Estuaries are not sampled as part of that program, and
36 it's only the federally-permitted fleet, and so, when I saw the
37 inshore plus the offshore, I wasn't sure what the --

38
39 **DR. MASI:** It's just the CPUE total that's coming out of it, and
40 so whatever -- You're right that whatever cELBs are on inshore
41 vessels, which there are few, and so it may not be
42 representative, but this is the data that's going into the stock
43 assessment models, and the point of showing it is just that it
44 is what is driving SSB in the stock assessment models.

45
46 **DR. GALLAWAY:** Jim, you can speak to that, but it's basically
47 the offshore fleet CPUE, from the beach out.

48

1 **DR. NANCE:** For the ELB data, yes.
2
3 **DR. MASI:** That's probably then another reason why it shouldn't
4 be driving spawning stock biomass in the model.
5
6 **DR. GALLAWAY:** Because I think the inshore fishery, particularly
7 with the increase in skimmer trawls, et cetera, probably has a
8 bearing. I haven't looked at inshore effort. If I look at
9 total effort that's used for the sea turtle assessment, which
10 includes the inshore, and, by that, I mean inside the barrier
11 islands, in the estuaries, as well as the offshore, it's quite a
12 larger number than -- The ELB fleet suggests an offshore effort
13 of 65,000 to 70,000 nominal days fished, whereas we're well over
14 100,000, when you add in the inshore, which are targeting all of
15 these species as well, and so I think they may have an impact
16 too and could be incorporated. Thanks.
17
18 **CHAIRMAN POWERS:** Thank you. I have a question/comment that I
19 guess it really relates to Bob Gill's, and that is, if you look
20 at all three of the species, the CPUE, you get this big jump in
21 the later years, but, also, in the very latest years, it has
22 come back down to the levels that were previous.
23
24 Because this is happening for all three species, it implies that
25 it's happening throughout the Gulf, which to me, wouldn't
26 necessarily suggest an environmental issue, but rather the
27 economics or the fishermen behavior or things like that, and I
28 wondered if anybody has any comments about that.
29
30 **DR. ROPICKI:** I have one quick question, kind of getting at
31 that. The catch per unit effort is in days fished, and I know,
32 at least in 2017, and maybe even 2016, and I would have to go
33 back and look, the Texas offshore fleet is relying on H-2B
34 workers, and, like I said, in 2017, I know they didn't get them,
35 and, in 2016, I think they might have had some issues too, and
36 so they went out with short crews. Was there any checking of
37 other CPUE measures, to see if that had an impact?
38
39 **DR. MASI:** No. The only data that was looked at, if this
40 question was to me, is the data that goes into the assessment
41 models. If there is other data sources of data though, it would
42 be good if you could email that to me, because, as we're
43 considering potentially changing the inputs, that would be
44 interesting to note.
45
46 **CHAIRMAN POWERS:** Thank you. Are there any other questions?
47
48 **DR. POWERS:** Maybe this is for Ryan, more than the Doctor, but

1 the Southeast Fisheries Center does have economists and social
2 scientist efforts down there, and what I'm wondering is where --
3 For instance, the financial budgets that are produced by the
4 Center down there on shrimp vessels and other things that are
5 going on, from an economics and social science perspective,
6 where does that get brought to our attention as the SSC?

7
8 Is that done regularly, like a stock assessment, or, if there's
9 an internal effort there at the Center that incorporates some of
10 those things, maybe it would be good for the committee to see
11 explicitly how that is done, and so that's my question.

12
13 **MR. RINDONE:** In circumstances where information from those
14 groups are incorporated into assessments, that information is
15 presented as part of the assessment. As far as their individual
16 projects that they may be working on, unless it's something that
17 is coming before the council as contributing to analyses to
18 support council actions, it's unlikely that those things would
19 be brought before the SSC for review.

20
21 If there is something that is going on down there though that
22 one of you is collaborating on that you think the SSC should
23 take a look at, we can always add those sorts of things to the
24 agenda, so long as the Science Center folks have time to come
25 and present that information.

26
27 **DR. ROBERTS:** I will respond that I think it would be
28 appropriate to have some presentation made, occasionally at
29 least, of the social science section. If they're doing the
30 work, they ought to be able to help us, by understanding more
31 broadly the industry and not just the harvest aspect, and so I
32 would recommend that.

33
34 **CHAIRMAN POWERS:** Thank you.

35
36 **MR. RINDONE:** Thank you. I have made a note.

37
38 **CHAIRMAN POWERS:** Are there any other comments on these three
39 presentations?

40
41 **DR. GALLAWAY:** Just a quick one. As I understand it, a new
42 stock assessment is going to be done sometime in the near
43 future, which will have a broader attendance and broader inputs,
44 and it will be a research-like stock assessment?

45
46 **DR. MASI:** That's correct, Benny. That's the plan, but there is
47 no definite decisions made yet.

48

1 **CHAIRMAN POWERS:** All right.

2
3 **DR. NANCE:** Michelle, your presentation was very good, but I
4 would recommend that we -- From the Center perspective, I think
5 it's wise to do the research track on these three species,
6 because, when we first started doing this, back in early 2012 or
7 2010, looking at this, SS was just brand-new in the Center, and
8 we were trying to use it for shrimp, and now I think we're a
9 little more familiar with SS and the things that are going on
10 there, and so I think it would be wise to look at each of the
11 three species of shrimp and update the indices and things like
12 that, and so I think a research track for these three species
13 would be a benefit.

14
15 **CHAIRMAN POWERS:** Thank you. We have sort of moved on to the
16 crux of this, the recommendations that we've made, and I don't
17 feel the need to vote on them or anything, but I would open the
18 floor for any other sorts of recommendations that we can carry
19 forward to the council. If not, are there any other questions
20 about Michelle's presentation? Okay. Then the next item was
21 the next presentation, which was the effort presentation.

22
23 **2018 + PRELIMINARY 2019 GULF SHRIMP FISHERY EFFORT AND LANDINGS**

24
25 **DR. MASI:** Thanks, everybody. Now I'm going to go through the
26 2018 and preliminary 2019 Gulf of Mexico shrimp effort
27 estimates. As a reminder, the effort estimate is coming from
28 our cellular electronic logbooks. Currently, we have about 450
29 active vessels that are transmitting data back to our center,
30 and that number comes from any vessel that has transmitted in
31 the last six months.

32
33 Then that data gets transmitted back to our data repository,
34 where we're able to estimate things like the distance and speed
35 of the vessel, which we use to estimate effort, and also it
36 gives us the length of the trip, so we know when a trip occurs,
37 and then we match that trip back to the reported landings at the
38 dealer, in order to get CPUE estimates.

39
40 In this slide here, I'm showing effort distribution for 2018 on
41 the left and the preliminary 2019 on the right. As a note, the
42 2019 data is about 70 percent complete, given the time the data
43 was pulled, and the 70 percent comes from averaging landings
44 across the last ten years, but, essentially, it's just
45 highlighting here that, between these two years, you can see the
46 effort hotspots are basically the same among the years.

47
48 This figure here is showing the total offshore shrimp fishery

1 landings and effort. The landings are shown by the blue trend,
2 with the effort shown by the orange trend, and you can see
3 landings for the fishery have remained relatively stable over
4 the span of years shown, whereas there has been a decline in the
5 offshore effort, starting around 2004 through to current, and
6 the preliminary data is shown there separate from the trend,
7 just because it is preliminary, and it's highlighted by those
8 little red circles there for each of the two trends.

9
10 Here we have total offshore shrimp fishery CPUE. Again, CPUE is
11 estimated here are just strictly catch over effort, and so you
12 would expect that, as landings have remained relatively stable,
13 but effort has dropped off, that you would see a bump-up in the
14 CPUE over that same span of years, and, again, that preliminary
15 2019 point is just shown for you there, suggesting that we are
16 going to be approaching what you have seen over the last ten or
17 so years.

18
19 In this table here, I am showing first 2018 data, and you have
20 offshore, just offshore data, in one of the rows of the table,
21 and you have Stat Zones 10 through 21, which is just the western
22 Gulf, shown in the next row, and then the total effort, which is
23 all effort across the Gulf of Mexico.

24
25 The important values, of course, are the baseline effort, which
26 is what we compare against. The baseline is the average effort
27 between 2001 to 2003, and that is shown as the 82,811, and then
28 the box in gold there is just showing that, based on Shrimp
29 Amendment 18, we are comparing now against an effort threshold
30 of -- We want to be 60 percent below, and I'm saying "we", but
31 the fishery wants to be 60 percent below the baseline effort
32 among those baseline years, and, in 2018, it was at 70.73, and
33 so we're meeting that threshold. Then the total effort is
34 100,748 days fished in 2018.

35
36 The preliminary data for 2019 is shown here in red, and, again,
37 just an important value to take away is that, for 2019, it
38 appears that we're still going to be meeting that threshold,
39 given that we're at 78.8 percent, with 70 percent of the data
40 in, and that concludes this presentation, and it was short and
41 sweet, and I just want to thank everyone for the contributions
42 to allowing us to estimate these values, and, of course, being
43 able to present them to you today, and then I open the floor to
44 any questions.

45
46 **DR. NANCE:** Joe, I have a question.

47
48 **CHAIRMAN POWERS:** Jim Nance.

1
2 **DR. NANCE:** Michelle, how is that 70 percent calculated?
3
4 **DR. MASI:** It's the average landings over the last ten years.
5
6 **DR. NANCE:** You say that 70 percent of the data is in.
7
8 **DR. MASI:** Right, and so I just looked at the data that's in so
9 far, and I compared that value against the average landings over
10 the last ten years, and it was at 70 percent.
11
12 **DR. NANCE:** Okay, and so it doesn't mean that 70 percent of the
13 dealers have sent their data in.
14
15 **DR. MASI:** No, and it means that we have approximately 70
16 percent of the data is in, based on what the landings have been
17 over the last ten years.
18
19 **DR. NANCE:** Okay, and so probably we have like through August
20 in?
21
22 **DR. MASI:** Probably, and the reason for showing the preliminary
23 data this year is that we're trying to be more in compliance
24 with what is requested by the red snapper bycatch reporting, and
25 so we're supposed to be reporting on an annual basis, and, since
26 we come to -- The council reports the Texas closure at this
27 time, and we're only able to present the 2019 preliminary data.
28
29 **DR. NANCE:** Okay. Thanks, Michelle.
30
31 **DR. GALLAWAY:** If you go back to the slide that shows the total
32 effort, inshore plus offshore, where you had the ELB is 69,000
33 nominal days fished, and, when you add the inshore to it, you
34 bump it up to 100,748, and my question earlier was is it the
35 69,000 number that's being used in the stock assessment, inshore
36 plus offshore, and not the 100,000 number, which includes the
37 inside the estuaries, I assume, and is that correct?
38
39 **DR. MASI:** Benny, it's my understanding that the code
40 incorporates whatever vessels have a cELB, and there are a
41 several that do inshore fishing, and so total just means that
42 we're accounting for all of the cELB vessels, but you're right
43 that it probably is largely more the offshore representation
44 than any inshore representation.
45
46 **DR. GALLAWAY:** I don't think that extra 40,000 or whatever it is
47 comes from any of the cELB data. It's my understanding that
48 that's an independent estimate of the inside the estuary effort.

1
2 **DR. MASI:** For total effort, total effort is coming from the
3 data outputs from the LGL code, and that's only using the cELB
4 data, and port agent data is included in there as well, but it's
5 very small in recent years, given the number of port agents.
6

7 **DR. GALLAWAY:** Okay. We can discuss this offline sometime.
8

9 **DR. MASI:** Okay.
10

11 **CHAIRMAN POWERS:** Thank you. Any other comments or
12 recommendations or questions? If not, if there are no
13 recommendations that are being made, then let's move on to the
14 last of the three presentations, which is, again, very short,
15 which had to do with royal red shrimp.
16

17 **PRELIMINARY 2019 ROYAL RED INDEX**

18

19 **DR. MASI:** This year, we're presenting the royal red index, and
20 I was informed that we were supposed to be presenting this every
21 year, and so apologies. This is the 2018 and preliminary 2019
22 royal red index, and the index is just what are the landings in
23 relation to the established ACL, and the ACL was established in
24 Shrimp Amendment 16, which puts it at 337,000 pounds of tails,
25 as shown by the red horizontal line in this figure, and then
26 here you're just looking at the annual landings of royal red
27 that are reported to the dealer, and you can see that the trend
28 has slightly declined since that highest level of catch in 1994,
29 which is what the ACL is based on, and then, of course, showing
30 preliminary 2019, which, as a reminder, again, is about 70
31 percent complete. That is all the information that I have in
32 this presentation, and it's very, very short and sweet, and so
33 I'm opening the floor to questions.
34

35 **CHAIRMAN POWERS:** As I recall, basically, this was -- What this
36 amounts to is a very data-poor kind of, quote, unquote,
37 assessment, in which the ACL was basically set at the largest
38 annual catch, and so, from that standpoint, the landings are
39 pretty clear there that it's less than that, but the trend going
40 down immediately says to me, well, you wonder why it's going
41 down, and it's something to think about, and I don't think we
42 can do anything about it right now, but, if somebody has any
43 insight into why it's going down, I would certainly like to hear
44 it.
45

46 **DR. MASI:** I think I might be able to answer that, but I don't
47 want to suggest anything, because I don't know the definite
48 answer, but I can tell you that there is a very small fleet that

1 fishes for royal red, and I can't remember that state that it
2 comes out of, perhaps Alabama, but it's just several vessels, is
3 my understanding, based on attending various meetings, and
4 another thing to note is that, of course, there is the
5 introduction of imports into the market.

6
7 I mean, I myself can go to the grocery store and see royal reds
8 not from the Gulf of Mexico, but from South America, and so I
9 would think that that's definitely impacting the ability to sell
10 the Gulf royal reds in the market, but, of course, I can't say
11 for certain that's what is driving down landings.

12
13 **CHAIRMAN POWERS:** You're lucky you can go to the grocery store
14 and actually see something labeled as royal red. All right.
15 Thank you. Are there any other comments or recommendations?
16 No? Then short and sweet. Thank you, Dr. Masi.

17
18 **DR. MASI:** Thank you, everyone.

19
20 **CHAIRMAN POWERS:** Then we'll move on to Agenda Item VI, Scope of
21 Work for Yellowedge Grouper Operational Assessment. Ryan.

22
23 **SCOPE OF WORK - GULF OF MEXICO YELLOWEDGE GROUPER OPERATIONAL**
24 **ASSESSMENT**

25
26 **MR. RINDONE:** Thank you, sir. As I said before, you guys have
27 done these scopes of work for gag and greater amberjack, and so,
28 this time around, we're looking at yellowedge grouper, which was
29 last assessed in SEDAR 22, using data through 2009. Then
30 Spanish mackerel will be next, and that one was last done in
31 SEDAR 28, using data through 2011.

32
33 We set these up to look like terms of reference, just because it
34 makes it easier to turn them into terms of reference later, and
35 it just keeps you guys used to seeing all generally the same
36 things.

37
38 For the first one there, you can just see that we're updating
39 the base model that was used last time in SEDAR 22, which you
40 guys have accepted them as best science, with data through 2021,
41 and then we're asking the Center to document all the traditional
42 MRIP FES pre and post-calibration changes, so that you guys can
43 see how those have affected the model, and then anything else
44 that warrants updating.

45
46 To the extent possible, we would like them to consider the
47 potential effects of red tide, acknowledging that the data
48 available to look into this for this particular species may be

1 limited, but if it's possible to take a look, and, if not, then
2 we'll just have to hope for further developments later on. Then
3 estimating steepness was an issue for the last model, and so
4 we're just asking that that be revisited.

5
6 Then you see, in Item Number 4, all of our management criteria,
7 our status determination criteria, and, given the discussions on
8 optimum yield that we've been having, as they relate to the Reef
9 Fish Amendment 48/Red Drum Amendment 5 document, you guys may
10 want to establish parameters for defining OY in these scopes of
11 work also, and, if you prefer to wait until the actual terms of
12 reference come about, then we can wait for that, and so I'll
13 leave that up to you though.

14
15 We have been using the previous three years fishing mortality,
16 their geometric mean, for determining the current fishing
17 mortality level, and then, for providing yield and catch
18 recommendations, we are asking for constant catch and annual
19 yields, and this may be an area to consider asking for a
20 description of the changes in the catch advice resulting from
21 the change from the Coastal Household Telephone Survey to the
22 Fishing Effort Survey.

23
24 We're just trying to show, basically, what the difference in
25 catch advice is that relates to the change in the survey versus
26 the change in stock condition, and so, if that's something that
27 you guys think that you would want to see, that would be
28 something to add to that, to provide a yield in the spawning
29 stock biomass bullet.

30
31 Then we are not recommending an in-person workshop for this
32 operational assessment, and so meetings would be done via
33 webinar, and so are there questions or edits for the scope of
34 work?

35
36 **CHAIRMAN POWERS:** Thank you. We would still have another shot
37 at this when you actually bring it up for approval, and is that
38 correct?

39
40 **MR. RINDONE:** As terms of reference, yes, but this is a good
41 opportunity to get the estimated workload on the books for the
42 Science Center, since we have so many things that we continue to
43 toss onto their plate. Just any heads-up that they can get for
44 knowing what data need to be worked up just gives them an
45 advantage, from a time and resource standpoint.

46
47 **CHAIRMAN POWERS:** Okay. Thank you.

48

1 **MR. GREGORY:** Dr. Powers, I have a question. I seem to
2 remember, in a previous time that we were looking at terms of
3 reference, we were told that it was pretty late in the game to
4 add anything substantial and that this is the point to do that,
5 and I don't know if it was -- I think it was Julie Neer that
6 told us that, and so, Ryan, is that still the case, given that
7 this is operational, because I would hate for us to miss an
8 opportunity to add something, and I seem to remember that we
9 were told the Science Center has already done preliminary work
10 and data collection by the time the terms of reference comes
11 back to us, but maybe I'm just not remembering it correctly.

12
13 **MR. RINDONE:** No, Doug, you're remembering it correctly, and it
14 certainly benefits the entire process to front-load as many of
15 the requests as possible now, as opposed to trying to see what
16 can be accomplished once we're at a point where we're approving
17 the terms of reference, which is usually done say about a year
18 after.

19
20 Any changes that you guys would want to make, I would encourage
21 you to make those now, because you may be more limited in what
22 changes can be included, and actually accomplished, at a later
23 date. That's why I had recommended consideration of defining OY
24 under the status determination criteria and then including a bit
25 under that third bullet under Item Number 4 about describing the
26 changes in catch advice as they result to the change to FES
27 versus the change in stock condition. That's something that you
28 guys saw with red grouper, and everybody really seemed to like
29 seeing that information, and so it's an opportunity to make that
30 a standard output that comes from the inclusion of the FES-
31 adjusted MRIP data.

32
33 **CHAIRMAN POWERS:** Thank you.

34
35 **MS. BOSARGE:** If I may jump in, Mr. Chairman, but I was just
36 wondering, on that last stock assessment for this species, were
37 there any big, outstanding issues? Did the assessment go just
38 smoothly and everything converged, or could you just summarize
39 that real quick? That might make something pop into our minds
40 that we need to evaluate or add to this scope of work.

41
42 **MR. RINDONE:** I will ask Doug to throw-in on this too, since he
43 was at the review workshop, but my recollection of it was that
44 it was one of the first attempts by the Center to use Stock
45 Synthesis, a much earlier version of it, on a Gulf stock, and we
46 don't have an awful lot of information on yellowedge grouper,
47 but we have a pretty reliable time series of commercial
48 landings.

1
2 I spoke with fishermen around the Gulf, then and actually about
3 two months ago, about what sorts of concerns they had, and the
4 concern that's come about now is that there's been a growing
5 amount of recreational effort on a stock that really wasn't
6 there ten years ago.

7
8 There are a lot more center consoles outfit with triple and
9 quadruple outboards and running 1,000-watt and stronger
10 transducers that can go out and reach these fish, and actually
11 find them, and so the effort there is getting a little more
12 targeted, and they're able to find these species, these and
13 tilefish and others. Those weren't really concerns during SEDAR
14 22. Doug, do you want to throw anything else at it?

15
16 **MR. GREGORY:** Only that I can't remember what happened nine
17 years ago. Sorry.

18
19 **CHAIRMAN POWERS:** Okay. Thank you. At this point, I don't see
20 anybody coming forward with additional items. I suppose, if you
21 can think of something in the next couple of weeks, you might
22 mention it to Ryan.

23
24 **MR. RINDONE:** Well, actually, I need to send these in after this
25 meeting, as soon as possible, and so the two recommendations
26 that we put in front of you guys is whether or not you want OY
27 to be defined as part of updating the model parameter estimates,
28 et cetera, and so that's kind of a yes or no, and then, under
29 that third bullet, under Item Number 4, when you guys saw red
30 grouper, Skyler provided a description of the change in the
31 catch advice as it resulted from the change to FES, versus just
32 the change in general stock conditions, how the catch advice
33 changed, because we changed the recreational data, versus how it
34 changed because the stock indicates that red grouper had
35 declined, and so that seemed like a good thing to include in
36 there, and I'm kind of asking for verification on that as well,
37 and so, if you guys think that's a good thing to include, say
38 so, and I will put it in.

39
40 **DR. PATTERSON:** I think it's good, and it's come up, and it's
41 going to come up again, what's the relative effect of FES versus
42 just the transitions in the stock, and so I think that's a good
43 idea to include.

44
45 **MR. RINDONE:** I will assume then that you guys want that
46 included for Spanish as well, and we'll just make that a
47 standard thing that we include from this point forward.

48

1 **CHAIRMAN POWERS:** Yes. Thank you.

2
3 **MR. RINDONE:** Then the last question was about OY.

4
5 **CHAIRMAN POWERS:** All right. Again, what was the issue with the
6 OY?

7
8 **MR. RINDONE:** Well, there's been a lot of discussions about
9 defining OY, and it's part of the status determination criteria
10 amendment that you guys have seen, just a couple of times, and
11 this would be an opportunity to have OY be something that is
12 defined as part of the assessment process and actually have a
13 value attributed to it. The status determination criteria
14 amendment is defining OY at a conceptual level, but that
15 definition, when applied in the assessment, translates to an
16 actual value of catch, and so that would be an output that would
17 be generated as a result of the assessment process, and I will
18 let John throw-in on this, too.

19
20 **DR. JOHN FROESCHKE:** This is kind of my question, and part of
21 this maybe will be more clear when we talk about OY, and there's
22 a presentation at the end of this meeting, and, as you will see
23 in there, and it's part of the amendment, we now have a slightly
24 different definition of how we're proposing to define OY,
25 meaning as the percentage of MSY rather than based on the yield
26 of FMSY.

27
28 Part of the reason for this is that the Science Center has
29 indicated that it's more work than to do it based on an FMSY,
30 which, to me, indicates that they are doing this as part of the
31 assessment process, and it would be more efficient for us to
32 tell them, or put it in the terms of reference, how it should be
33 done and be consistent with what we're going to define these
34 likely, going forward, for various stocks.

35
36 The other part, since I've got the phone here, is -- The Science
37 Center may discuss this, but they could reference OY as part of
38 the global MSY, which they have done for a couple of species,
39 and perhaps do we want to include a global MSY calculation as
40 part of the terms of reference for these stocks going forward.

41
42 **MR. GREGORY:** I think John just gave us a different question,
43 but back to the OY, and not the global MSY, but the OY. Ryan,
44 could we put something in here to use -- To calculate the status
45 determination criteria of OY as defined by the Gulf Council,
46 since it's not settled yet? Do we just put something generic
47 that says, yes, we'll do it an assessment, but it will be
48 whatever methodology the Gulf Council has approved?

1
2 **MR. RINDONE:** Yes.
3
4 **CHAIRMAN POWERS:** Yes, I would support that, and it would make
5 it much more clear to whoever is doing the assessment.
6
7 **MR. RINDONE:** Yes, and that's an easy thing to stick in there.
8 No problem.
9
10 **CHAIRMAN POWERS:** Okay, and then the other question that John
11 brought up, what was that again?
12
13 **DR. FROESCHKE:** This is based on some discussions we've had with
14 the Science Center regarding OY, and, again, this might come up
15 in the last presentation, but, essentially, they have indicated
16 that OY, as reduced from MSY, based on a variety of factors of
17 biological, socioeconomic, et cetera, is reduced.
18
19 However, the way that we set up our SPRs is already reduced from
20 a global MSY, because we don't optimize the way the fishery is
21 prosecuted with respect to allocations and fleets and size and
22 things like that, and so they indicated that it would be
23 possible to calculate a global MSY and then base the OY as a
24 scalar of that, and they can correct me if I'm saying that
25 incorrectly, but I believe that's the case, but, at any rate,
26 the true MSY would be based off of the global MSY and not the
27 MSY based on the fishery, as we have it defined with respect to
28 size limits and allocations and those kinds of things.
29
30 **CHAIRMAN POWERS:** I understand what the Center was getting at
31 here, and it's that you're trying to move away from the effect
32 that selection has on what the absolute value of MSY is, but, in
33 a lot of cases, from a conservation standard standpoint, what
34 you're looking for is what is the biomass at MSY, and that tends
35 to be -- I mean, to me, if you use the global MSY sort of
36 definition, that's really what you're getting at, is the biomass
37 for that conservation standard.
38
39 I am not -- I guess, looking at the terms of reference here that
40 relate to that, MSY proxy equals the yield at FMSY and so on, as
41 I see that term of reference, or whatever you want to call it,
42 if I were doing this, I would react to say that, well, you know,
43 given the global MSY, you could translate that into an FMSY, and
44 so on and so forth, and so I guess what I'm saying is I don't
45 see any real need to change that phrase within these scopes of
46 work. I think that's flexible enough for the people to adjust
47 to issues like how you use the global MSY and so on, but correct
48 me if I'm wrong. Thank you. What we have for a recommendation

1 is the two items that we just mentioned there. Okay, Ryan?

2
3 **SCOPE OF WORK - GULF OF MEXICO MIGRATORY GROUP SPANISH MACKEREL**
4 **OPERATIONAL ASSESSMENT**
5

6 **MR. RINDONE:** We will get those recorded. I have those
7 recorded, and I will assume that you guys want those done for
8 both yellowedge and Spanish.

9
10 Spanish mackerel were last assessed in SEDAR 28, using data
11 through 2011, and so we're asking that be updated through 2021,
12 and the same update, with all of the MRIP data showing changes
13 pre and post-recalibration, and any else that can or should be
14 updated, take a swing at it.

15
16 Estimating steepness was done with Spanish, and I believe it was
17 0.83, if my memory serves me, and so we're just asking that they
18 try and estimate steepness again, since it was done the last
19 time, and we have updating model parameter estimates, and, for
20 this, we'll also add what Doug had said about calculating OY as
21 defined by the council and using the geometric mean of the
22 previous three years of fishing mortality for F current, and
23 then, for that third bullet there, also adding in the changes to
24 catch advice resulting from FES versus changes in stock
25 condition, with projections out annually at least for five
26 years, and then also constant catch. We are also not
27 recommending an in-person workshop for Spanish, given the
28 lighter workload, and so this one should also be able to be done
29 via webinar. Any questions or edits for the Spanish?

30
31 **CHAIRMAN POWERS:** Okay. Other than ones that we previously
32 mentioned, are there any others?

33
34 **MR. GREGORY:** I have a general question. Ryan, would you
35 consider these two scopes of work to be equivalent to -- I
36 forgot the terminology now, but a standard assessment rather --
37 Not a benchmark, but a standard or an update?

38
39 **MR. RINDONE:** They're more standard than update, in that neither
40 has had the FES-adjusted MRIP data included yet, and we're
41 asking for consideration of red tide mortality for yellowedge
42 grouper, and it may come to pass that, for that latter item
43 there, that there's just not enough data to say, or they may be
44 able to provide an estimate, using data from FWC and from the
45 other data that were collected by the Science Center as part of
46 the 2018 study, and so we'll have to see.

47
48 We are asking for some new things, and, if we weren't asking for

1 anything new, that would be a strict update, and so that's why
2 we're saying that an in-person data and assessment workshop is
3 not recommended, but there would be a couple of webinars
4 scheduled to talk about some of these things.

5
6 **MR. GREGORY:** Thank you.

7
8 **CHAIRMAN POWERS:** Thank you. Any other suggestions for Ryan?
9 If not, then thank you, and we'll move on to the next agenda
10 item, which is the lane snapper, and this is an update of SEDAR
11 49, Agenda Item VIII, and Nancie Cummings I believe is making
12 the presentation.

13
14 **UPDATE OF SEDAR 49: LANE SNAPPER WITH MRIP-FES DATA INCLUDING**
15 **OFL AND ABC RECOMMENDATIONS EXCLUDING DISCARDS**

16
17 **DR. NANCIE CUMMINGS:** Hi, everyone. Thank you for showing up
18 again. What I am going to give you today would be the third
19 update of the SEDAR 49 OFL and ABC estimates for lane snapper,
20 Gulf of Mexico lane snapper, and I'm going to -- The SSC has
21 seen this twice, in terms of OFL and ABC and total removals, and
22 so I am going to basically present to you the adjusted estimates
23 and landings only, and I will be very brief.

24
25 I will just briefly go over the data inputs and the results, but
26 there will not be an extensive treatment in the presentation
27 today, and that was given in September and then again in
28 January, and it's also been presented to the Reef Fish AP in
29 October, the methodology and the results, like I said, in total
30 removals, and so, again, just some background, and then the
31 purpose here is to give you the adjusted OFL and ABC and
32 landings only in pounds whole weight.

33
34 Some background, and we'll do this going back to January and
35 then to September, and then you will see the results. I
36 provided, in January of 2020, an updated OFL and ABC, in units
37 of total removals, using the DLM Tool Itarget model. That
38 model, Itarget, was used in the SEDAR 49 data-limited evaluation
39 by Sagarese and team.

40
41 The inputs for the January 2020 model were from Cummings and
42 Sagarese in September of 2019, and those inputs were commercial
43 landings, updated commercial landings, from 2015 through 2018
44 and an updated CPUE index. The results were provided. For the
45 recreational component, we used the FES estimates as well as I
46 switched out and we used the MRIP MRFSS estimates, and so you
47 saw the results of the updated OFL using both recreational
48 currencies.

1
2 In September of 2019, I provided OFL and ABC in total removals,
3 again from the application of the DLM Tool Itarget model, and
4 those were provided only using the MRIP MRFSS estimates, and so,
5 basically, the difference between January and September was
6 that, in January, we updated to give you both MRIP currency,
7 FES, and also MRIP MRFSS currency, and, again, those estimates
8 were provided in total removals, and then, in September, I also
9 separately updated the headboat CPUE index through 2018.

10
11 Just as a reminder, SEDAR 49 used estimates of landings, and the
12 CPUE series was only through 2014, and so we had four new years
13 of data, basically, in September, 2015 through 2018, for the
14 index, as well as the inputs of commercial landings and
15 recreational catch.

16
17 The purpose of today is specifically just to provide you an
18 update of the OFL and the ABC in landings only, and so the
19 application of the model was -- Again, it was the DLM Tool
20 method, the Itarget model, and the CPUE index was the same CPUE
21 index that was updated and provided to you in September and
22 again used in January.

23
24 The Itarget model was the same model and the same procedures
25 that were applied in the SEDAR 49 evaluation, and, just briefly,
26 in SEDAR 49, the panel went through a very extensive set of
27 examinations of models, DLM Tool data-limited models, that could
28 be used, could be appropriate, for -- It was a whole suite of
29 species, and there were only two species that were deemed --
30 Lane snapper was one of those, and the Itarget method was the
31 model method that was selected by the panel, and so that was for
32 SEDAR 49, and, for this exercise in September, and again in
33 January, we were asked just to update the SEDAR 49 application.

34
35 We were not doing -- I just want to be clear that we were not
36 doing a full new assessment, an examination of inputs and et
37 cetera. We were just updating that model.

38
39 You have seen this before as well, and this is the updated
40 index, the CPUE index, and it was from the headboat survey, and
41 that index was chosen by the panel to be the best suited for
42 modeling abundance of lane snapper. SEDAR 49 is in orange, and
43 the SEDAR 49 update is sort of gray-brown line here. As you
44 see, and as you know, and we have pointed it out since several
45 times since September, the index is computed to increase since
46 the late 1990s, up through, recently, 2017 or so, and then it
47 shows a decline more recently.

48

1 Then, similarly, and this is the lane snapper total headboat
2 effort in orange, followed by the lane snapper in -- Lane
3 snapper is in orange, and total headboat effort is in blue, and
4 they both have similar trends there.

5
6 Again, I just did sort of a slightly-revised slide from the one
7 in September and January, and I have actually -- This is the
8 total lane snapper landings, recreational and commercial
9 combined, but I have shown you the -- I have split out the AB1
10 and the B2, and so you can see that, in terms of the total
11 component, the recreational fishery is the dominant component,
12 and also the discards in red here, or orange, are a very small
13 component of the fleet, of the total removals. On average, the
14 units have been -- The AB1 have, of the total recreational
15 removals, have been, on average, 98.3 percent.

16
17 I will not go over all of this specifically, but, basically, the
18 idea is to apply the data-limited Itarget model. Specifically,
19 these numbers refer to some weighting factors that were selected
20 by the panel. Basically, we use the recent index, the last five
21 years of the index, and we compare it to the index over the
22 reference time series.

23
24 The reference time series was 1999 through 2008, and that was
25 the period of time that the panel, through an examination of the
26 catch data, decided -- They felt like the fishery was stable.
27 That does not necessarily equate to an MSY scenario. It could,
28 but it does not necessarily, but this is the way the index, the
29 way the method, is applied and used.

30
31 Basically, if the index is increasing, your catch advice would
32 be expected to increase, and, likewise, if your index is
33 decreasing compared to the reference period, then you would
34 expect a decrease in the catch advice. The procedure follows
35 the application of Geromont and Butterworth in 2014, and that's
36 from Australia.

37
38 These are the results, and what this is is it's just a table of
39 the adjusted Gulf of Mexico lane snapper OFL and ABC estimates
40 for the two different sets of data, using the MRIP FES catch
41 estimates as the inputs for the recreational component or using
42 MRIP MRFSS estimates for the recreational component.

43
44 The commercial component into the Itarget model is the same for
45 both sets of data, or estimates, and, likewise, the index, which
46 is used in the procedure, is the same as for each of the
47 applications. The OFL is the 50th percentile, and these numbers
48 were adjusted -- These were obtained by adjusting the table

1 values in Cummings 2020 by the three-year ratio of AB1 to AB1
2 plus B2. For each of these, as I just pointed out in this
3 photo, the AB1 of the total AB1 plus B2 is 96.3 percent. For
4 the MRFSS set, it's 98.3 percent.

5
6 These numbers, these values, were obtained for 30 percent and 40
7 percent ABC and the OFL by multiplying the numbers from Cummings
8 2020 by these percentages, and I have those at the end of this
9 presentation for 2020, if you wanted to see them, and I didn't
10 see any reason to put those in. Basically, the OFL from the
11 January model was just multiplied by this value, and likewise
12 for these, and so these have been adjusted.

13
14 **CHAIRMAN POWERS:** While you have this slide on, Nancie, can you
15 explain to me again what the difference between the first row is
16 and the second row?

17
18 **DR. CUMMINGS:** It's the application of the Itarget model using
19 the MRIP FES recreational catch for the inputs. This is the
20 application using the MRIP MRFSS for the recreational inputs,
21 and the commercial inputs are the same between both, and,
22 obviously, the index is the same.

23
24 If you were to update your OFL and your ABC calculations, and
25 you were going to use the MRIP MRFSS inputs, these are your OFLs
26 and your ABC values. Now we have seen the white paper that the
27 FES units of estimates for recreational catch are the -- I don't
28 know if we want to call it best practices, but that's the
29 accepted set of recreational data now, I believe, and these are
30 your adjusted OFL estimates in landings only.

31
32 The SEDAR 49 determinations used MRIP MRFSS estimates, and I can
33 show you these numbers were -- It was around 364,000 pounds was
34 your OFL from SEDAR 49, but those were in these currencies, this
35 currency.

36
37 This is just a relative frequency output of OFL in total
38 removals from the Itarget model using the FES inputs for the
39 recreational component. The TAC from your SEDAR 49 evaluation
40 was 364,000 pounds whole weight. Any questions?

41
42 I am just going to shoot to this slide from January of 2020 that
43 is Slide 13 in your package, and I also included the Itarget
44 model output from March of 2017, the SSC meeting, that it
45 basically considered the SEDAR 49 Itarget outputs, and the OFL
46 was 364,000, and so, basically, these values, these three values
47 for each of these rows, were adjusted by the percentages, 98.3
48 and 96.3, to get to your adjusted estimates of OFL and ABC, in

1 landings only.

2
3 This takes me to the end of the update of the update of the
4 update, and, again, this is an update of the SEDAR 49
5 evaluation, and it was not a standard assessment or an
6 operational assessment. It was not a full examination, but it
7 was just updating the model output from the Itarget, for the
8 Itarget model, and, again, as Ryan had sort of pointed out
9 earlier this morning, we have catch advice for these different
10 sets of data, whether your recreational catch is in FES units or
11 whether it's in MRFSS units.

12
13 I am finished, and I thank everybody, especially all the -- I
14 just keep thanking all of our people out in the field, because
15 that's where we get the data, the samplers and the port agents,
16 and I appreciate that. Are there questions?

17
18 **CHAIRMAN POWERS:** Thank you. Can you just leave the slide with
19 that table up on there? I think that's the crux of what we're
20 dealing with.

21
22 **DR. CUMMINGS:** Correct.

23
24 **CHAIRMAN POWERS:** What we're really being asked is which row to
25 use, essentially, correct? Ryan?

26
27 **MR. RINDONE:** You guys have already said that you thought that
28 it was best to use the FES-adjusted MRIP data. The problem with
29 the last time was that the catch advice that you were given also
30 included discards, and we don't use discards in quota monitoring
31 for any species, and we only use the actual landed fish, and so
32 the A out of the A, B1, and B2, and only the A are used in
33 defining the OFL and the ABC and the ACL and the ACT. We needed
34 you to be able to see the OFL and the ABC in that way, so that
35 it translated apples to apples, basically, downstream to an ACL,
36 and, if the council decides to, an ACT, and so that's what you
37 have in front of you now.

38
39 You had previously approved, at the last meeting, using the FES-
40 adjusted data, but it's just that you didn't know that it
41 included discards, and we didn't find that out until after the
42 fact, and so these data, or these values that you see before you
43 in that top row, updated Itarget, et cetera, MRIP FES, they do
44 not include the discards. It's just the landed catch, and so
45 just the A, and that would represent the catch advice that you
46 would forward on to the council, if you continue to find it to
47 be correct and the best available.

48

1 As a refresher for you, the last time around, given just the
2 general data-poor nature of lane snapper, which is what you used
3 as your justification for this, you guys chose to go with the
4 ABC based on a 30 percent probability of overfishing.

5
6 **CHAIRMAN POWERS:** Okay. Thank you. Essentially, we are on
7 record of preferring the first row, but we are now adjusting it
8 for the small amount of discards that were included, and what
9 Ryan has also said is that, previously, we had recommended the
10 30 percent column. Is there any movement to change from that
11 previous recommendation? What it amounts to is the ABC would be
12 1,028,973.

13
14 **MR. GREGORY:** The numbers are not here in this presentation, but
15 I went back to the presentation in January that did include the
16 discards, and the numbers we're seeing here for ABC and OFL are
17 approximately 40,000 pounds less than what was presented to us
18 in January, and it's 40,000 pounds for 30 percent, 40 percent,
19 and OFL. I just wanted to point that out.

20
21 **CHAIRMAN POWERS:** Okay. That's consistent with what Nancie said
22 about the ninety-eight-point-whatever percent of --

23
24 **DR. CUMMINGS:** 96.3, Joe, for FES.

25
26 **CHAIRMAN POWERS:** All right. Anyway, what we're looking for
27 then -- I don't hear any objection to any of this and any real
28 changes in our recommendations, but I think Ryan needs some sort
29 of specific motion. Is that correct, Ryan?

30
31 **MR. RINDONE:** Yes, and I need a motion saying what you guys
32 recommend for an OFL and an ABC.

33
34 **CHAIRMAN POWERS:** What we are recommending, and it is consistent
35 with what we've done before, is the 30 percent and the OFL, and
36 so the 30 percent would be 1,028,973, and the OFL would be
37 1,053,834, and so if somebody would make that in terms of a
38 motion and translate those ABC and OFL into that motion.

39
40 **MR. GILL:** Mr. Chairman, a question.

41
42 **CHAIRMAN POWERS:** Excuse me. Before you start, Bob, who is this
43 on the screen?

44
45 **MS. MATOS:** I took control back over.

46
47 **CHAIRMAN POWERS:** All right. That's what I wanted. Go ahead,
48 Bob.

1
2 **MR. GILL:** My question is do we need to go through the BSIA
3 motion again before we define OFL and ABC?
4

5 **MR. RINDONE:** I am not certain that's necessary, because you
6 have approved the method by which the numbers were generated,
7 the model and the data, and that certainly doesn't stop you from
8 making sure all the Is are dotted and the Ts are crossed, and so
9 by all means.

10
11 **CHAIRMAN POWERS:** All right. Bob, do you want to do both?
12

13 **MR. GILL:** I can if you want. **I move that the SSC finds that**
14 **the updated Gulf of Mexico lane snapper assessment, using**
15 **landings only, using the Itarget model, with FES-calibrated MRIP**
16 **data is the best scientific information available.**
17

18 **DR. CUMMINGS:** Bob, there is a problem with your phrasing, your
19 syntax. The model was applied -- The Itarget model was applied
20 using all the data. The OFL that we see resulting from
21 estimates were adjusted, and so they're not using landings only.
22 It's using all the removals, but the results are adjusted to
23 provide OFL and ABC in landings only. I want to clarify the
24 first -- If there are any questions, please ask me.
25

26 **MR. GILL:** Thank you, Nancie. **I think we can delete the "using**
27 **landings only".**
28

29 **CHAIRMAN POWERS:** I think that would do it.
30

31 **DR. CUMMINGS:** You're welcome, and thank you.
32

33 **CHAIRMAN POWERS:** Is there a second to this motion?
34

35 **DR. NANCE:** I will second, Joe.
36

37 **CHAIRMAN POWERS:** Is there any further discussion on this
38 motion? **Is there any objection to this motion? If not, the**
39 **motion carries.**
40

41 Then the second part of this relates to the OFL.
42

43 **MR. GILL:** I will make an attempt, and, Nancie, correct me if I
44 have this incorrect, and so the SSC finds that the updated Gulf
45 of Mexico lane snapper assessment adjusted for landings only
46 using the Itarget model with FES-calibrated MRIP data is useful
47 for management advice. The OFL, using the 50th percentile of the
48 PDF, is 1.05 million pounds whole weight. We only use two

1 decimals, and so 1.05 million pounds. The ABC, using the 30th
2 percentile of the PDF, is 1.03 million pounds whole weight.
3
4 **CHAIRMAN POWERS:** Thank you. Before we get the second, the same
5 sort of issue as before about adjusted for landings, and the
6 assessment isn't be adjusted for landings only.
7
8 **DR. CUMMINGS:** The assessment results.
9
10 **CHAIRMAN POWERS:** I think a better way is just say the
11 assessment, and take out the "adjusted for landings". Then,
12 after the ww in each one, just say million pounds whole weight
13 in landings.
14
15 **DR. CUMMINGS:** I have one question for clarification for both
16 motions, and that is should you not put the March 2020, because
17 there have been -- This is the third update, and so I have
18 written, in my document, a little update history, but often
19 people will just go to the council website, and they will get
20 the SSC results, or the summary results.
21
22 **CHAIRMAN POWERS:** All right. Thank you.
23
24 **DR. CUMMINGS:** They won't look at the document.
25
26 **CHAIRMAN POWERS:** Is there a second to this motion?
27
28 **DR. NANCE:** I will second, Joe.
29
30 **CHAIRMAN POWERS:** All right. Thank you, Jim. Any further
31 discussion on the motion?
32
33 **UNIDENTIFIED:** Take out the word "only", because that referred
34 to the --
35
36 **CHAIRMAN POWERS:** Yes. Okay. Thank you. Any other discussion?
37 **Any objection to this motion? If not, the motion carries.**
38
39 **MR. GILL:** Mr. Chairman, a question for Nancie. Nancie, could
40 you confirm that the Table 1 is correct for the B2, because all
41 the B2 in the Table 1, which is the FES, with the exception of
42 1986, are exactly 2 percent of the landings.
43
44 **DR. CUMMINGS:** From Table 1, and is that in the report?
45
46 **MR. GILL:** In the report, yes.
47
48 **DR. CUMMINGS:** Are you talking FES or --

1
2 **MR. GILL:** FES, yes. The Table 3 in the appendix, which was the
3 MRFSS landings, varied from roughly 3 percent to half a percent,
4 although the last four years were identical to the pound, but
5 the one of concern here is the Table 1, but they're all 2
6 percent.
7
8 **DR. CUMMINGS:** Let me talk about the Appendix Table 3, the
9 recreational. I want you to recall that, in September, when we
10 did the update for -- We only updated the last five years of
11 AB1, and so, if you look at Appendix Table 3, the numbers are
12 the same, right, the 5877, and it was an average of the last
13 three years. When we went to January of 2020, we actually
14 updated the entire time series, because we were using FES, and
15 we had a choice to use the entire time series.
16
17 **CHAIRMAN POWERS:** Slow down, Nancie. In terms of the document
18 here, I think you're referring to Appendix Table --
19
20 **DR. CUMMINGS:** It's Appendix Table 3, and let me go back to the
21 screen, because I don't know what you've got up.
22
23 **CHAIRMAN POWERS:** I think it's Appendix Table 3.
24
25 **DR. CUMMINGS:** Go to Appendix Table 3, and I hope that's --
26 That's the CPUE, and that's just the CPUE. Can you go to Table
27 2, so I can see what Table 2 was? That's the September. That's
28 the MRIP currency, September, and so, if you look here, this is
29 the MRIP currency, and you will look at the 2015 through 2018
30 for B2 are going to be -- They're the same, and the reason is
31 because we only updated -- We update the total, but, actually,
32 these B2s were not -- I got the updated estimates of AB1 from
33 the ACL monitoring through Ryan, and so those numbers were
34 updated for the AB1, but, for the B2, they were estimated using
35 the SEDAR 49 last three-year average, and so that's how you get
36 those, and the commercial were updated and obtained through
37 Ryan, and so that's why that fraction didn't change of B2 for
38 those last few years, and so, Bob, you had another question
39 about Table 1?
40
41 **MR. GILL:** In Table 1 --
42
43 **DR. CUMMINGS:** That's Appendix Table 1, and so go up --
44
45 **MR. GILL:** I'm talking just Table 1.
46
47 **DR. CUMMINGS:** Okay, and so these numbers, and so your question
48 is?

1
2 **MR. GILL:** All the B2 are 2 percent of the AB1, with the
3 exception of 1986.

4
5 **DR. CUMMINGS:** Okay, and so the calculation, Bob, is the AB1
6 over the AB1 plus B2, and it's not the fraction of B2 of AB1,
7 because there is a difference. The calculation is AB1 over B2.
8 Excuse me. The calculation is AB1 over AB1 plus B2, and I have
9 a table, and I think it's in the January document, that actually
10 gave the fractions.

11
12 **MR. GILL:** Well, I'm not relating so much to the percentage of
13 the AB1 over the sum of the AB1 and the B2, but just noting that
14 every B2 in Table 1 is 2 percent of the AB1. It's constant.

15
16 **DR. CUMMINGS:** But we're not comparing B2 to AB1. We're
17 comparing AB1 over the sum of the AB1 plus B2.

18
19 **CHAIRMAN POWERS:** But, regardless, what he's saying is that
20 relationship is constant.

21
22 **DR. CUMMINGS:** Okay. Let me look at the data. I am actually in
23 my data file, and so give me one second. I have got the
24 fraction of AB1 to AB1 plus B2 varying from the last three years
25 is 97.5, 97.8, 98.9, 98.3.

26
27 **CHAIRMAN POWERS:** That's close enough.

28
29 **DR. CUMMINGS:** If you want to toss the screen to me, I can show
30 you the fractions.

31
32 **CHAIRMAN POWERS:** I don't think the discussion is well suited to
33 this forum. Bob, are you okay with continuing this elsewhere?

34
35 **MR. GILL:** I agree. Let's do this offline.

36
37 **CHAIRMAN POWERS:** Thank you. All right. That concludes, I
38 believe, Ryan, this agenda item. Do you need anything else for
39 Agenda Item VIII?

40
41 **MR. RINDONE:** No, and I think that takes care of it.

42
43 **CHAIRMAN POWERS:** Thank you. Then we'll move on to Agenda Item
44 IX, and this is the discussion of the status determination
45 criteria, and I think John is doing this.

46
47 **DISCUSSION OF OPTIMUM YIELD OPTIONS IN REEF FISH AMENDMENT**
48 **48/RED DRUM 5**

1
2 **DR. FROESCHKE:** I can give a brief just what this is about, and
3 then Clay Porch is going to give a presentation from the Science
4 Center perspective. What happens here is, originally, the SSC
5 made a recommendation about OY, that any range between 50 and 90
6 percent of the yield from the FMSY was an acceptable definition
7 of OY.
8
9 The Science Center, at a council meeting, had asked us to change
10 the definition from the yield at FMSY to just the scalar of MSY,
11 and so we had made that change in the document, and, at the last
12 council meeting, Doug Gregory had noted that this was different,
13 and he was asking if these map one-to-one, meaning is 75 percent
14 of MSY the same as 75 percent of the yield at FMSY, and it turns
15 out that they're not, and so we had asked the Science Center to
16 look into this and give us a little presentation about this and
17 their perspectives, and so that's where we're at.
18
19 **MR. GREGORY:** If I may, Mr. Chair. My main concern was that we
20 had recommended the range that we did, and, if the council had
21 misunderstood that that was similar to accepting the range of
22 percentages of MSY that was in the document, it could be a
23 problem, and I also thought the SSC should weigh-in on this
24 different approach to estimating MSY, which was very different
25 from any approach we have used in the past, and so I wanted it
26 brought back to the SSC, and I appreciate the staff doing that.
27
28 **CHAIRMAN POWERS:** Okay. Thank you. Is Clay giving the
29 presentation?
30
31 **MS. MATOS:** He's on, but his audio pin needs to be entered for
32 us to hear him. I sent it to him, but I don't see it lighting
33 up yet.
34
35 **CHAIRMAN POWERS:** Is Shannon on?
36
37 **MS. MATOS:** No.
38
39 **CHAIRMAN POWERS:** I would think that she could do it.
40
41 **MS. MATOS:** He says he's entered the pin, but it doesn't seem to
42 have done anything. He says that he's going to call in again.
43
44 **DR. CLAY PORCH:** Good morning, everyone.
45
46 **CHAIRMAN POWERS:** Are you controlling the presentation, or is
47 Jessica controlling the presentation?
48

1 **DR. PORCH:** I am not yet controlling it. I don't care which way
2 we do it. It's not a very long presentation. If she wants to
3 maintain control and just advance the slides, that's fine.

4
5 **CHAIRMAN POWERS:** Why don't we do that.

6
7 **DR. PORCH:** Perfect. Unfortunately, Shannon is undergoing some
8 mandatory supervisor training, which is not mandatory for me,
9 which is why I'm able to step out, but, anyway, I'm glad to be
10 with you guys again. It's been a while.

11
12 What I am going to do is kind of step through her presentation
13 and kind of explain the logic we had in suggesting that we
14 decrement catch directly, rather than fishing mortality rate.
15 The first principle that I want to just make sure is clear here,
16 and I think everybody gets it, but we know that the population
17 has to be rebuilt to at least a level that supports the maximum
18 sustainable yield, but the long-term landings can be reduced
19 below MSY, and so that's straight from the Magnuson-Stevens Act.

20
21 I think this has already been covered, and John mentioned that
22 the SSC has punted this back to us to give an explanation for
23 our logic, and so we'll just move on to the next slide.

24
25 Essentially, as I understand what the motion is, it's to
26 suggest, for OY, the long-term yield at either 50 percent of the
27 FMSY proxy, 75 percent of the FMSY proxy, or 90 percent of the
28 FMSY proxy, which there is nothing wrong with the logic there,
29 and we don't have concerns with that, per se, but, essentially,
30 it says that the effort exerted by the fishery as a whole would
31 be reduced by either 50 percent, 25 percent, or 10 percent,
32 respectively.

33
34 In terms of what we would end up doing for the stock assessment
35 is it essentially adds another projection that we have to run,
36 and so we have to determine FMSY, a proxy, and, almost always,
37 we end up using a proxy these days, and that requires a set of
38 projections, and then we need to do further projections, because
39 of the way the proxy for long-term yield that would be called OY
40 is being specified. You just have to basically decrement the
41 FMSY and run a long-term projection and find out what the OY is.

42
43 There have been apparently some cases, although I can't remember
44 them, and I know I've seen it with other councils, where OY has
45 actually been defined as a multiple of MSY, partly for that
46 reason. There's just not necessarily a reason to do another
47 long-term projection and just add to the calculation burden, but
48 there's a couple of other reasons why we might not want to do

1 that.

2
3 First of all, I know the SSC has talked quite a bit about how we
4 might incorporate the relevant economic, social, and ecological
5 factors to compute the OY, and, ideally, it would be an explicit
6 calculation, where you did a series of analyses, but, of course,
7 that's really challenging in the mixed-use fisheries that we
8 have, and most of the discussions really come back to the
9 socioeconomics that go behind the allocation, but we don't
10 really have an explicit reason for actually recommending a
11 particular percentage reduction in the effort exerted by the
12 fishery.

13
14 That being the case, we were suggesting that we might want to do
15 something that's a little more intuitive, and that is ask the
16 council to directly reduce the MSY proxy itself, rather than
17 trying to do something that's indirect, like say, well, we're
18 going to reduce effort by X amount.

19
20 In terms of mapping, they certainly don't map one-to-one with
21 the options that the SSC has put forward before, and the Science
22 Center actually didn't really weigh-in on what the percentages
23 would be, and that's something that the IPT has put together,
24 but it's definitely not a one-to-one mapping.

25
26 A 50 percent reduction in effort does not result in a 50 percent
27 reduction in the MSY proxy. It would reduce the OFL, the short-
28 term OFL, by 50 percent, but not the long-term, because, if you
29 have reduced effort, generally the stock would also rebuild to a
30 little bit higher level, and so the equilibrium catch under a 50
31 percent reduction in effort, for example, is seldom 50 percent
32 of the MSY itself. Feel free to stop me and ask questions if
33 I'm being unclear on any of these points.

34
35 We're not married, certainly, to any of these particular
36 percentages, and the range of options could change, if the SSC
37 thinks it's appropriate.

38
39 This is basically the rationale for going to directly
40 decrementing the actual MSY proxy, and the first, from the
41 council perspective, is we think it's less intuitive to
42 determine how much you should reduce the fishing mortality rate
43 than it is to reduce catch, and, in general when we've done
44 these calculations, we usually come up with a 25 percent
45 reduction in fishing mortality rate, and that amounts to about a
46 10 percent reduction in long-term yield, give or take, again
47 because the stock grows more with less fishing.

48

1 However, we have to remember that we typically use SPR proxies,
2 because we don't know the long-term recruitment potential of the
3 stock, and, a lot of times, we're calculating these proxies
4 assuming recent levels of recruitment will persist into the long
5 term, which is probably not the case, and it's just a proxy.

6
7 When you do that, you find that the long-term yield at FOY is
8 sometimes actually calculated to be greater than the long-term
9 yield at the FMSY proxy itself, and, again, this is just an
10 artifact of using proxies, and we're not directly calculating
11 the maximum sustainable yield. We're using a proxy, but that
12 proxy doesn't necessarily correlate exactly one-to-one with the
13 MSY under these long-term recruitment assumptions that we end up
14 having to make.

15
16 Again, it's just an artifact. We say, on the one hand, we don't
17 know long-term recruitment, and so we specify a proxy, but then
18 there's an insistence that we produce an MSY proxy, and so we
19 end up having to make an assumption about long-term recruitment,
20 and, when you do that, it just turns out that sometimes 75
21 percent of say F SPR 30 percent yields a higher yield than F 30
22 percent SPR itself would. Does that make sense, because that's
23 an important point. It has happened a few times and caused a
24 lot of problems.

25
26 **DR. PATTERSON:** Yes, it makes sense.

27
28 **DR. PORCH:** Then the third reason is, again, we're basically
29 just asking folks to make another set of projections, and one of
30 our goals is to actually increase throughput, and so it sort of
31 amounts to busywork.

32
33 I did want to add a couple of thoughts as we think about what
34 these percentage reductions in either the fishing mortality rate
35 or the catch should be, and I think a very important point that
36 we need to take into account is that all those various long-term
37 landings calculations we provide are actually conditioned on
38 decisions the council has made in consideration of social and
39 economic factors that basically lead the council to whatever the
40 current mix or allocation of fisheries is, and so, in other
41 words, the council allows a certain combination of fisheries.

42
43 Sometimes they recommend specific allocations, and sometimes
44 it's implicit, but there are a lot of socioeconomic
45 considerations that go into determining what that mix of
46 fisheries will be, and that mix of fisheries actually results in
47 a lower yield than if they had selected a more optimal
48 arrangement of fisheries.

1
2 The bottom line is the long-term yield that achieves the SPR
3 target is lower with the council's mix and allocation of
4 fisheries than it would be with a more optimal selection
5 pattern, and so you could say that the long-term yield that
6 we're currently counting as an MSY proxy is actually a potential
7 proxy for OY itself, because you are reducing catch to
8 accommodate various socioeconomic considerations.

9
10 It may not be all the socioeconomic considerations that you
11 might want to consider, and it doesn't account for ecological
12 considerations, and so you certainly could reduce it more than
13 what we've got, but, basically, what we're calling an MSY proxy
14 does in fact incorporate some socioeconomic considerations.

15
16 I would say, as you're thinking about what these percentages
17 should be, those options on Slide 6 could be regarded as further
18 reducing the OY to accommodate relevant ecological factors or
19 additional socioeconomic factors.

20
21 **DR. POWERS:** Clay, to your first point there, what do you mean
22 by optimal selection patterns? Is that reducing discards?

23
24 **CHAIRMAN POWERS:** I think this issue of what has been called the
25 global MSY, and, I mean, basically, you're saying, if you take
26 all the fish at one age at one particular instance in time, that
27 would get you the most, quote, unquote, maximum sustainable
28 yield, and anything other than that is going to reduce it, and
29 so how fisheries actually operate automatically reduces it, just
30 because of selection, and so I think that's what he is referring
31 to when he says optimal selection patterns. It's relative to
32 the global MSY.

33
34 **DR. PORCH:** Yes, that's right, but you could also -- Granted,
35 you really can't achieve this theoretical optimum, just fishing
36 hard on one age class, or even in the sense of just knife-edge
37 selection, but the council certainly could select a different
38 mix of fisheries that would result in a higher yield, which
39 would be more like a practical definition of MSY, but the
40 council elects not to do that.

41
42 I guess, thinking of it another way, let's consider any given
43 fishery with its current mix of fisheries, and then Assane and
44 his buddies come up with an irrefutable analysis that suggests
45 that the fisheries should be reallocated, so as to achieve a
46 certain optimum yield. As soon as you do that reallocation, and
47 then you give it to us to make a long-term projection, even
48 though you have done an economic analysis that led to this

1 reallocation, the system, as it stands now, would just call that
2 the new MSY.

3
4 All I'm saying is we should just kind of consider the fact that,
5 when we're regarding how much to reduce OY relative to the
6 existing MSY proxy, that the MSY proxy itself does implicitly
7 include some socioeconomic considerations, in the fact that
8 certainly the yield could be higher, even with the existing mix
9 of fisheries just changing the relative allocation.

10
11 **DR. LORENZEN:** I think it makes good practical sense to me, and
12 I have sort of one slight philosophical issue, and I think
13 that's that the current way we define OY makes it explicit that
14 we're achieving that reduction in yield through a reduction in
15 fishing mortality, whereas, if you just talked about the
16 reduction in yield, in principle, one way to get there is to
17 increase fishing mortality, and, of course, that's not what we
18 mean, but I think there is -- I don't know whether there's the
19 potential for any practical confusion about that, and so whether
20 we should either add some wording to that effect or something
21 like that.

22
23 **DR. PORCH:** I am taking that as a comment, and so I wasn't going
24 to respond, but I guess I will just reiterate that, if we stuck
25 with the current definition of OY as the long-term yield at some
26 reduction in FMSY, you do have the potential, when we're using
27 proxies, to actually have the OY be larger than the MSY. It's
28 just an artifact that we have to make some assumption about what
29 long-term recruitment potential is, if we're going to compute
30 these equilibrium statistics.

31
32 I mean, ideally, if we were going with SPR proxies, simply
33 because we don't know the long-term recruitment potential, then
34 we wouldn't even be computing proxies, and we wouldn't have this
35 confusion. I am looking at the proxies for long-term yield,
36 because we don't know it, because we don't know the long-term
37 recruitment potential.

38
39 **CHAIRMAN POWERS:** Thank you. That was the end of the
40 presentation, right, Clay?

41
42 **DR. PORCH:** I think that's it. I think the next thing is just
43 that nice roadmap.

44
45 **CHAIRMAN POWERS:** All right. Thank you. John, what you're
46 looking for here is some recommendation about following through
47 on this or not following through on this?

48

1 **MR. GREGORY:** My question is -- I've got a number of questions,
2 but one is, if the council adopts something like this, will the
3 Center then turn around and ask us to revise all of our existing
4 OY definitions to be consistent? That's one question.

5
6 The other question is I think, in the document that we looked at
7 in September, where we have joint plans with the South Atlantic
8 Council, the South Atlantic has already defined OY as equal to
9 ABC. Is that where we're going, in a sense?

10
11 **DR. PORCH:** I mean, that would -- I have to admit that I need to
12 catch up on that, because that happened before my time, but it
13 doesn't really make sense to say OY, which is a long-term catch
14 value, equals ABC, because ABC is an annual value, and there has
15 been some confusion about having annual OYs, versus the long-
16 term equilibrium concept.

17
18 **DR. FROESCHKE:** I guess, just to kind of get what I was looking
19 for on this, in the presentation from Clay, in Slide 4, there is
20 the motion from the SSC from September of 2019, and I guess my
21 question is, is the SSC still satisfied with this, or would they
22 be willing to consider an equivalent in the scalar of MSY? I am
23 just looking for some guidance from the SSC about this.

24
25 **DR. PATTERSON:** Clay put in some rationale of why the scalar to
26 MSY was preferred, and, Clay, can you go back over that slide
27 one more time and just give us all the various aspects of that?

28
29 **DR. PORCH:** Yes. Just go forward a few. These are -- The
30 Science Center rationale is what I think he's looking for, and
31 so the three main reasons -- I think one is, when you start
32 telling the council to pick one of these as a preferred option,
33 they don't have a very intuitive feel for what that really
34 means, when you say a 25 percent reduction in fishing mortality
35 rate, which really maps close to a 25 percent reduction in
36 effort, but even that is hard to really intuitively grasp, when
37 you think about how fisheries are actually managed, with closed
38 seasons, et cetera. I think it's just a little more
39 straightforward for them to understand if you say we're going to
40 reduce the MSY by X percent.

41
42 Second, it does happen sometimes, and it has happened in the
43 past, that, when we project at say 75 percent of FMSY, the long-
44 term yield ends up being higher than the MSY proxy itself, and
45 so we get pushback of, well, how can this be, and you're saying
46 we're reducing F, but we're getting a bigger long-term yield
47 than with MSY, and that's completely an artifact of that we're
48 using proxies and having to make some assumptions about long-

1 term yield, and so the mere fact that we're calculating these
2 proxies, when we don't know long-term yield, leads to this kind
3 of a problem, and it has happened more than once.

4
5 Then the third one, which is less important, but still an issue,
6 is that, if we're going to work with 75 percent FMSY, et cetera,
7 we just end up having to do another set of projections for every
8 assessment, which ends up adding up, and it reduces throughput,
9 but I think the main reasons are the top two, the first two.
10 It's really less intuitive for the council to grasp what's
11 really happening when you reduce the fishing mortality rate, and
12 then, second, you will have the situation where sometimes OY is
13 bigger than MSY, which doesn't fit the letter of the law.

14
15 **DR. PATTERSON:** Thanks. In this respect, Clay put up the
16 percentages as sort of a strawman of 90 percent, 75 percent, or
17 50 percent reduction from MSY to estimate the OY, and, going
18 back to the Restrepo et al. simulations that were done after the
19 Sustainable Fisheries Act, and that's where I think this 75
20 percent of FMSY as the OY proxy came from, and then the
21 equilibrium OY would be about 95 to 98 percent of MSY if you
22 fished long-term at 75 percent of FMSY, and across a variety of
23 different life histories.

24
25 It seems to me that it would make more sense to have the upper
26 value be 95 percent, instead of 90 percent, but then I'm not
27 really sure what the other two should be here. Should they be
28 90 and 85 percent of MSY, as the next two options? I mean, if
29 you reduce it to 75 percent or 50 percent, and those correspond
30 to really drastic reductions in F that are much different than a
31 75 percent FMSY or a 50 percent FMSY.

32
33 **DR. PORCH:** That's absolutely true, and so I agree that, if we
34 go with decrementing catch directly, then those percentages
35 should be revised.

36
37 **CHAIRMAN POWERS:** I agree, in terms of the Rationale Number 1.
38 It certainly does make this more intuitive, but, as Doug
39 suggested, it might make throughput, from maybe our perspective,
40 less optimal, and so that flies in the face of Number 3. In
41 other words, if all these things have to be revisited for all
42 the different amendments, then that may be an issue.

43
44 For Item Number 2, I guess my feeling is, when that occurs, when
45 you end up getting an OY that's greater than FMSY, is that
46 coming about because you're picking an SPR as an FMSY proxy and
47 not relating that to the actual steepness in the stock-
48 recruitment relationship?

1
2 **DR. PORCH:** Well, in a sense, because we don't know what the
3 stock-recruitment relationship is, and that's always been the
4 problem. You have a shotgun blast, and so there's really no
5 evidence in the models for a particular relationship. In fact,
6 there's not even necessarily in Beverton-Holt.

7
8 **CHAIRMAN POWERS:** Yes, but you're picking -- When you do the
9 projections, you're picking a particular recruitment
10 relationship one way or another, and, therefore, you are picking
11 a steepness, and that steepness may or may not relate to the
12 actual SPR that you are using.

13
14 **DR. PORCH:** The logic is typically that the SPR should be
15 something above the minimum that it could possibly be associated
16 with MSY, but, otherwise, the determination has been kind of
17 divorced from the concept of steepness, because, as soon as you
18 bring in steepness, you are also supposing a particular function
19 form for the stock-recruit relationship, and so the short answer
20 to your question is yes, because we're just assuming, in some
21 cases, a particular spawner-recruit relationship, but, more
22 often than not, just the recent levels of recruitment that we're
23 using for the OFL calculations.

24
25 **CHAIRMAN POWERS:** Anyway, I guess, amongst these three items,
26 Number 1 is, to me, the most important, it being intuitively --
27 Making it clear, more clear, to the councils what it is that
28 they're deciding about. I think, at some point in the stock
29 assessment process, you're probably going to have to translate
30 back and forth between OY and FOY, in some form or another, but
31 still, from a communications standpoint and a decision-making
32 standpoint for the councils, I would be in favor of the
33 Rationale Number 1 there.

34
35 **DR. PATTERSON:** I second that idea, Joe, and I think that's an
36 important consideration. We get back to what are the
37 percentages that we would recommend, and are we comfortable with
38 just coming up with them sort of in an ad hoc manner, or sort of
39 the other extreme is the simulation approach that Restrepo et
40 al. took.

41
42 Do we put in there different reductions of FMSY, to see what
43 that is, and for a variety of life histories, and where that
44 gets you, as far as OY as a percentage reduction from MSY, or do
45 we just say 95, 90, 85, or some other combination, is more
46 appropriate, thinking that the council most likely will choose
47 the higher end there, that gives the least reduction from MSY,
48 but which also corresponds, in this case, if we chose 95

1 percent, OY equal to 95 percent of MSY, that corresponds to the
2 simulation results that suggest, if you reduce FMSY by 25
3 percent, then you end up with about that level of long-term
4 yield at OY, and so I think that's kind of the choice we're
5 faced with here.

6
7 Do we depart from 90 percent, 75 percent, and 50 percent, which
8 I think there's good reason to do that, but then what do we
9 actually pick as the three that we have to defend as the
10 alternatives?

11
12 **MR. GREGORY:** Maybe we just need some more analysis. I am
13 looking at the Restrepo report, and, on page 3, it says that
14 age-structured deterministic models suggest that, for a large
15 combination of life history parameters, the recommended default
16 can result in a high stock size, around 130 percent of BMSY, at
17 the expense of a relatively small foregone yield, achieving
18 around 95 percent of MSY.

19
20 I know we have a difficult time choosing 95, 90, 85, 75, and I'm
21 certainly uncomfortable going down to 50 percent, as others have
22 said, and so the recommendation that we made in September really
23 doesn't hold true, for me, when you're looking at straight
24 percentage reductions. Thank you.

25
26 **CHAIRMAN POWERS:** I think that's clear, that, if we're changing
27 to recommending a percent of MSY, then it's not the same thing
28 as percent of FMSY, and that's essentially what we're saying, is
29 we have to adjust that range that is considered useful.

30
31 **DR. FROESCHKE:** Would it be fair to request the Science Center
32 translate the values, based on FMSY to MSY, and use those?

33
34 **CHAIRMAN POWERS:** Anything is fair to ask the Center to do.
35 Whether they do it or not, I don't know. I think that would be
36 useful, but in a very generic and simple way, because, with
37 individual stocks, there's always going to be issues, and so, if
38 there is some, like I said, sort of simple approach to this, to
39 sort of box it in a little bit, and my guess is that it will be
40 somewhere above 80 percent, 80 to 95, or some range in there,
41 that we'll end up using, but I don't know.

42
43 **DR. PORCH:** I mean, it could be done, and I'm not sure how
44 defensible it would be, in the sense that that percentage could
45 change quite a lot, depending on the spawner-recruit
46 relationship used, and so steepness and the type of
47 relationship, and so this could get involved very quickly, but I
48 would come back to the original basis for any of these percent

1 reductions.

2
3 I mean, there's nothing magical about 75 percent or 95 or 90
4 percent reduction in F. Was there an actual basis for that?
5 Did you consider that, okay, if we reduce effort by this much,
6 this achieves a particular goal, and what was the economic or
7 social goal of doing that, or are we just saying that we want
8 the population size to be a little bit bigger? Why do we want
9 it bigger? I'm just not sure if those conversations really were
10 had in a way that was quantitative, to lead to those particular
11 percentages.

12
13 **CHAIRMAN POWERS:** They clearly did not, and those conversations
14 did not occur, which has always sort of bothered me, but that's
15 one of my reasons for let's be more intuitive about reducing the
16 MSY.

17
18 Also, one of the issues that I always bring up is that, when
19 you're reducing the fishing mortality rate, you're basically
20 reducing participation, which could be in terms of employment or
21 things like that, and a 25 percent reduction in F could have
22 marginal differences, in terms of yield, but very large
23 differences, in terms of letters to congressmen and things like
24 that, but that's just an aside.

25
26 John, what you're looking for is -- If you go to what we decided
27 last September, what you're looking for is another alternative
28 here, where we're doing some options for reductions of MSY,
29 correct? That's what you're looking for?

30
31 **DR. FROESCHKE:** Yes, and I guess what I would be looking for is
32 to rephrase Options 2a through 2c, as they're on the screen, and
33 say, for example, Option 2c is 90 percent of the FMSY proxy.
34 Well, the Science Center has said that's approximately 75
35 percent of the MSY, and so 75 percent, and then, in parentheses,
36 you could leave the equivalent in the conversion, and so if we
37 could just get conversions, based on the same methodology that
38 they used for that, for the 50 percent and the 75 percent, then
39 I think we could move forward and get some feedback from the
40 council if they're comfortable with that range of alternatives,
41 and, in my view, that would be consistent with what the
42 recommendation is that was provided in September of 2019.

43
44 **DR. PATTERSON:** I don't think you can provide just a straight
45 conversion, because, depending on the life history, is it a
46 long-lived species, what's the age composition, et cetera, it's
47 75 percent of FMSY is going to yield to -- It's going to result
48 in a different reduction from MSY to OY as a percentage there.

1 I mean, there's not just one number, and so I don't think we can
2 actually put, even parenthetically, what the reduction would be,
3 as far as FMSY.

4
5 I do think we can just copy and paste this motion and offer a
6 new one with Options 2a, 2b, and 2c being 95 percent, 90
7 percent, and 85 percent of MSY, instead of 50 -- Excuse me.
8 That would be 85, 90, and then 95, a, b, and c, of MSY, versus
9 50 percent, 75 percent, and 90 percent of FMSY.

10
11 **CHAIRMAN POWERS:** This motion says that, in Action 4, which was
12 basically giving a set of options to the council, and so we
13 don't have to -- The way I interpret this is we don't have to
14 negate this motion that's on the screen, but we could another
15 one, which has exactly what Will suggests, and is that
16 allowable, John?

17
18 **DR. FROESCHKE:** Yes, and I think that would be fine.

19
20 **DR. PATTERSON:** The only issue with that, Joe, is that we don't
21 actually know what -- Given a range of simulations, what a 90
22 percent or a 50 percent reduction from FMSY would get us, as far
23 as a percentage reduction from MSY to OY, and so, if we're
24 saying we have this one, and then we have this one down here,
25 they may not actually be congruent.

26
27 **CHAIRMAN POWERS:** Well, they're not supposed to be. It's a
28 completely different set of options.

29
30 **DR. PATTERSON:** Shouldn't the logic that goes into them be
31 similar?

32
33 **CHAIRMAN POWERS:** No, because it says, for reef fish stocks and
34 red drum, where OY is undefined, OY, implicitly accounting for
35 relevant yada, yada, yada, these are the three options.

36
37 **DR. PATTERSON:** So you're saying add three more options that are
38 the MSY-based ones?

39
40 **CHAIRMAN POWERS:** Yes. You could say an alternative option
41 would be to do this, in terms of FMSY, and, admittedly, you
42 would run into the problem of people would want to -- If there
43 were three options there, people would want to link the two, and
44 clearly what you're saying is we shouldn't be linking the two,
45 because we don't know, but --

46
47 **DR. FROESCHKE:** Right now, just for some additional information,
48 right now, the options in the document simply say, for example,

1 Option 2a is 50 percent of MSY or MSY proxy, and so the original
2 form that is on the screen now is no longer in the document, and
3 it's just simply been replaced, based on the prior discussions,
4 and so, if the SSC feels that both of those should remain in the
5 document, then I think that would be helpful.

6
7 **EXECUTIVE DIRECTOR SIMMONS:** John, I don't know if it would help
8 to remind everybody what stocks you're talking about again, but
9 remember that these are very data-poor species. We may never
10 have stock assessments for some of these, and so I think just
11 reminding everyone what reef fish stocks we're talking about
12 again might be helpful.

13
14 **DR. FROESCHKE:** Okay, and so that's another issue that we have
15 talked about, is that all of these methods to compute a
16 numerical value would require an assessment, and the stocks and
17 complexes that are currently affected by this amendment include
18 the deepwater grouper, tilefish, the jacks complex, mid-water
19 snapper, cubera, lane snapper, goliath, mutton, yellowtail,
20 hogfish, and then the shallow-water grouper, which include the
21 black grouper, scamp, yellowmouth, and yellowfin, and so the
22 vast majority of these don't have assessments, and are unlikely
23 to be assessed in the coming years.

24
25 **DR. PORCH:** But a couple of them do have assessments, and scamp
26 is being assessed.

27
28 **CHAIRMAN POWERS:** To me, that's more of an argument for another
29 reason for why you would want to have OY defined in terms of
30 yield rather than fishing mortality rates, because, one way or
31 another, you're going to have a yield that relates to MSY, and
32 so, therefore, one way or another, you can have a yield that
33 relates to OY, whereas the FMSY proxies and things like that get
34 very convoluted.

35
36 What are the wishes? What I'm hearing here is we need to
37 essentially replace this motion of Alternative 2 with a set of
38 percentages of MSY, and that's one thing that we can do, or we
39 can add another alternative, where we would keep the ones that
40 you see here, but then add another with options for percent of
41 MSY, and so what's the will of the SSC?

42
43 **DR. PATTERSON:** Joe, I just have a question real quick for John
44 on that. I think John just said that, in the current draft of
45 the document, this language here has been scrapped, where it no
46 longer says 50 percent of FMSY, but it says 50 percent of MSY,
47 and is that correct?

48

1 **DR. FROESCHKE:** Yes, and I just emailed it to Jessica, and
2 hopefully she can put it on the screen, so you can see the
3 language that is currently in the document.
4
5 **DR. PATTERSON:** If that's the case, then we don't really need to
6 talk about adding new options, but just what the percentage is
7 here under this option.
8
9 **CHAIRMAN POWERS:** Yes, I agree. Will, you had suggested just
10 replacing those with three percentages?
11
12 **DR. PATTERSON:** Yes.
13
14 **CHAIRMAN POWERS:** What were those three percentages?
15
16 **DR. PATTERSON:** 85, 90, and 95.
17
18 **CHAIRMAN POWERS:** So you are making a motion equivalent to that?
19
20 **DR. PATTERSON:** Yes.
21
22 **CHAIRMAN POWERS:** All right. Thank you. Do we leave Option 2d
23 there? I guess so.
24
25 **DR. PATTERSON:** One thing that I think should be clarified
26 though is that, although it's implied that OY is the equilibrium
27 value, I think we should actually put the word "equilibrium" in
28 there.
29
30 **DR. NANCE:** Or "long term".
31
32 **DR. PATTERSON:** Or "long term". Either or. **After "where",**
33 **"where long-term OY is defined".**
34
35 **CHAIRMAN POWERS:** Okay.
36
37 **DR. PATTERSON:** I'm sorry. **"Undefined" was correct.**
38
39 **CHAIRMAN POWERS:** All right. Is there a second to this motion?
40
41 **MR. GILL:** I will second.
42
43 **CHAIRMAN POWERS:** Okay. Thank you. Any further discussion?
44 All right. **If not, are there any objections to this motion?**
45 **With that, the motion carries.**
46
47 Thank you, and thank you, Clay, and thank Shannon for learning
48 how to be a supervisor.

1
2 **DR. PORCH:** Will do. Thank you, everyone.

3
4 **CHAIRMAN POWERS:** Agenda Item X is Other Business, and I would
5 bring up one thing, just as a quick question. The meeting on
6 April 13 or 14, the MRIP meeting, we've already had one person
7 drop out, because of the corona virus, and has there been
8 discussions about this sort of thing within the council or
9 council staff?

10
11 **MR. RINDONE:** We're going to give everyone fifteen rolls of
12 toilet paper, to make sure that they are well protected.

13
14 **EXECUTIVE DIRECTOR SIMMONS:** We have a call with Headquarters on
15 Thursday, to talk about travel and talk about this, and so,
16 right now, we're planning to still have the council meeting at
17 the end of the month, and we're planning still to have this
18 meeting, but we'll just have to see what's said and let
19 everybody know.

20
21 **CHAIRMAN POWERS:** All right. Thank you. Just keep us all in
22 the loop then.

23
24 **MR. GREGORY:** Mr. Chair, I would like to pass around some good
25 advice. If you need sanitizer and can't find it, just go buy a
26 bottle of Everclear. It is 75 percent alcohol, and use it as a
27 sanitizer rather than drinking it.

28
29 **CHAIRMAN POWERS:** All right. Thank you very much. Is there a
30 motion to adjourn?

31
32 **MR. GILL:** So moved, Mr. Chairman.

33
34 **DR. ROBERTS:** Ken seconds.

35
36 **CHAIRMAN POWERS:** I have a second. With no objections, then
37 thank you very much, and I think this has been a useful
38 discussion, and so thank you.

39
40 (Whereupon, the meeting adjourned on March 11, 2020.)

41
42 - - -
43