

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

STANDING, REEF FISH, MACKEREL, AND SHRIMP SCIENTIFIC AND STATISTICAL COMMITTEES

TAMPA, FLORIDA

SEPTEMBER 20-21, 2016

**STANDING SSC MEMBERS**

- Luiz Barbieri.....
- Lee Anderson.....
- Harry Blanchet.....
- Benjamin Blount.....
- Mary Christman.....
- Bob Gill.....
- David Griffith.....
- Jack Isaacs.....
- Jeff Isely.....
- Walter Keithly.....
- Kai Lorenzen.....
- Paul Mickle.....
- William Patterson.....
- Joe Powers.....
- Sean Powers.....
- Ken Roberts.....
- Steven Scyphers.....
- Robert Shipp.....
- James Tolan.....

**SPECIAL MACKEREL SSC MEMBERS**

- Jason Adriance.....
- Melissa Recks.....

**SPECIAL REEF FISH SSC MEMBERS**

- Jason Adriance.....
- Marcus Drymon.....
- Robert Ellis.....
- Jennifer Herbig.....
- John Mareska.....

**SPECIAL SHRIMP SSC MEMBERS**

- Richard Burris.....
- Ryan Gandy.....
- Leslie Hartman.....
- Jeffrey Marx.....
- James Nance.....

1 **STAFF**  
2 Steven Atran.....Senior Fishery Biologist  
3 Matt Freeman.....Economist  
4 John Froeschke.....Fishery Biologist-Statistician  
5 Karen Hoak.....Administrative and Financial Assistant  
6 Morgan Kilgour.....Fishery Biologist  
7 Ava Lasseter.....Anthropologist  
8 Jessica Matos.....Administrative Assistant  
9 Ryan Rindone.....Fishery Biologist/SEDAR Liaison  
10 Charlotte Schiaffo.....Research and Human Resource Librarian  
11 Camilla Shireman.....Administrative Assistant  
12 Carrie Simmons.....Deputy Executive Director

13  
14 **OTHER PARTICIPANTS**

15 Shanae Allen.....FWRI  
16 Leann Bosarge.....GMFMC  
17 Shannon Calay.....NMFS/SEFSC  
18 Jessica Carrol.....FWC  
19 Nick Farmer.....NMFS/SERO  
20 Claudia Friess.....UF  
21 Sue Gerhart.....NMFS/SERO  
22 Jeff Greenspan.....UF  
23 Chad Hanson.....Pew Charitable Trusts  
24 Rick Hart.....NMFS/SEFSC  
25 Peter Hood.....NMFS/SERO  
26 Mike Larkin.....NMFS/SERO  
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29 Campo Matens.....GMFMC  
30 Joe O'Hop.....FWRI  
31 Matt Smith.....NMFS/SEFSC  
32 Mike Travis.....NMFS/SERO

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TABLE OF MOTIONS

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PAGE 47: Motion that the SSC concurs with the review report for SEDAR 47, goliath grouper, and, hence, does not find the results suitable for stock status or management advice. The motion carried on page 52.

PAGE 113: Motion that the SSC recommends the commercial and recreational data decision tool as appropriate tools to evaluate gray triggerfish management options. The motion carried on page 116.

PAGE 126: Motion that the SSC finds the analysis for the red snapper federal for-hire split season alternatives to be technically sound and suitable for management advice. The motion carried on page 128.

- - -

1 The Standing, Reef Fish, Socioeconomic, Shrimp, and Spiny  
2 Lobster Scientific and Statistical Committees of the Gulf of  
3 Mexico Fishery Management Council convened in Tampa, Florida,  
4 Tuesday afternoon, September 20, 2016, and was called to order  
5 at 1:00 p.m. by Chairman Luiz Barbieri.  
6

## 7 INTRODUCTION

8  
9 **DR. JOE POWERS:** Good afternoon. My name is Joe Powers, and I  
10 welcome all of you as the Vice Chair of the Scientific and  
11 Statistical Committee of the Gulf of Mexico Fishery Management  
12 Council. We appreciate your attendance and input into this  
13 meeting, and representing the council are Camp Matens and Leann  
14 Bosarge. Also, Luiz Barbieri, the chair of our committee, will  
15 be delayed for about an hour or so. When he returns, then I  
16 will give up my position of power.  
17

18 Notice of this meeting was provided to coastal newspapers  
19 throughout the area, Marine Extension, NMFS port agents, and the  
20 Federal Register. Notice was also sent via email to subscribers  
21 of the council's press release email system and was posted on  
22 the council's website.  
23

24 Today and tomorrow's meetings will include a number of topics.  
25 The business of the SSC, in terms of elections and things like  
26 that, are the Standing and Mackerel SSC Session, Standing and  
27 Reef Fish SSC Session, Standing and Shrimp Session, and any  
28 other business that comes before the committee.  
29

30 This meeting is open to the public. Members of the public are  
31 welcome to speak at times that will allow the orderly conduct of  
32 business. Please advise me or the council staff if you desire  
33 to address the committee. This meeting will be streamed live  
34 and recorded. Summary minutes of the meeting will also be made  
35 available to the public. For the purpose of voice  
36 identification, each member is requested to identify him or  
37 herself. Because some people are on the webinar, we're going to  
38 establish some rules of conduct here.  
39

40 **MS. JESSICA MATOS:** The secretary is going to be unmuting the  
41 people who are on the webinar. Once they are unmuted, they will  
42 need to mute themselves. I will start by calling each  
43 individual person on the webinar, and then they can introduce  
44 themselves and unmute themselves. The first person is Jim  
45 Nance. Leslie Hartman.  
46

47 **MS. LESLIE HARTMAN:** This is Leslie from Texas Parks and  
48 Wildlife.

1  
2 **MS. MATOS:** Thank you, Leslie. Mary Christman.  
3  
4 **DR. MARY CHRISTMAN:** This is Mary Christman, University of  
5 Florida and MCC Statistical Consulting.  
6  
7 **MS. MATOS:** Thank you. Melissa Recks.  
8  
9 **MS. MELISSA RECKS:** This is Melissa Recks with the Florida Fish  
10 and Wildlife Conservation Commission.  
11  
12 **MS. MATOS:** Thank you. Steven Scyphers.  
13  
14 **DR. STEVEN SCYPHERS:** This is Steven Scyphers from Northeastern  
15 University.  
16  
17 **MS. MATOS:** Leslie Hartman.  
18  
19 **MS. LESLIE HARTMAN:** Leslie Hartman, Texas Parks and Wildlife.  
20  
21 **MS. MATOS:** Thank you, Leslie. Jim. Thank you.  
22  
23 **DR. J. POWERS:** Again, my name is Joe Powers. I am with the  
24 Louisiana State University. Now moving to my right.  
25  
26 **MR. CAMP MATENS:** Camp Matens, council member, Louisiana.  
27  
28 **MS. LEANN BOSARGE:** Leann Bosarge, council member, Mississippi.  
29  
30 **DR. WILL PATTERSON:** Will Patterson, SSC.  
31  
32 **MR. BOB GILL:** Bob Gill, Standing SSC.  
33  
34 **DR. BENJAMIN BLOUNT:** Ben Blount, Standing SSC.  
35  
36 **DR. JASON ADRIANCE:** Jason Adriance, Special Mackerel and  
37 Special Reef Fish SSC.  
38  
39 **DR. JOHN MARESKA:** John Mareska, Reef Fish SSC.  
40  
41 **DR. JIM TOLAN:** Jim Tolan, Standing SSC.  
42  
43 **DR. DAVID GRIFFITH:** David Griffith, Standing SSC.  
44  
45 **DR. JENNIFER HERBIG:** Jenny Herbig, Reef Fish SSC.  
46  
47 **DR. KAI LORENZEN:** Kai Lorenzen, Standing SSC.  
48

1 **DR. LEE ANDERSON:** Lee Anderson, Standing SSC.  
2  
3 **DR. JACK ISAACS:** Jack Isaacs, Standing SSC.  
4  
5 **DR. ROBERT ELLIS:** Robert Ellis, Special Reef Fish SSC.  
6  
7 **DR. JEFF ISELY:** Jeff Isely, Standing SSC.  
8  
9 **DR. SEAN POWERS:** Sean Powers, Standing SSC.  
10  
11 **DR. KEN ROBERTS:** Ken Roberts, Standing SSC.  
12  
13 **DR. WALTER KEITHLY:** Walter Keithly, Standing SSC.  
14  
15 **MR. STEVEN ATRAN:** Steven Atran, council staff.  
16  
17 **DR. J. POWERS:** Let's go to the back of the room there, too.  
18  
19 **MS. SHANAE ALLEN:** Shanae Allen, FWRI, with the Stock Assessment  
20 Group.  
21  
22 **MR. CHAD HANSON:** Chad Hanson, Pew Charitable Trusts.  
23  
24 **MS. SUSAN GERHART:** Susan Gerhart, NMFS SERO.  
25  
26 **MR. RICH MALINOSKI:** Rich Malinowski, NMFS SERO.  
27  
28 **MR. JOE O'HOP:** Joe O'Hop, Florida Fish and Wildlife Research  
29 Institute.  
30  
31 **DR. SHANNON CALAY:** Shannon Calay, Southeast Fisheries Science  
32 Center.  
33  
34 **DR. CARRIE SIMMONS:** Carrie Simmons, Gulf Council staff.  
35

36 **ADOPTION OF AGENDA**  
37

38 **DR. J. POWERS:** All right. If you will look at our agenda, and  
39 it's there on the screen, we have gone through the first part of  
40 the agenda, but we need to adopt the agenda. Is there any  
41 motion to adopt?  
42  
43 **DR. BLOUNT:** So moved.  
44  
45 **SSC MEMBER:** Second.  
46  
47 **DR. J. POWERS:** We're going to have to establish how we're going  
48 to do this, in terms of the webinar. I would hope that, for

1 something like this, that we could just say, are there any  
2 objections? I will give time to object, if you're on the  
3 webinar, but are there any objections to accepting the agenda as  
4 it is?

5  
6 **MR. ATRAN:** Just for your information, this is on the agenda,  
7 but we do have one item that we put under Other Business,  
8 assuming that we have time to get to it. It's a discussion on  
9 the terms of reference, the scheduling, and solicitation of  
10 participants for SEDAR 50, which will be an assessment on  
11 blueline tilefish. I am not sure if it's definite that we're  
12 going through with that assessment or not, but we need to get  
13 started on the terms of reference at least.

14  
15 **ELECTION OF CHAIR AND VICE CHAIR**

16  
17 **DR. J. POWERS:** Thank you. That gave enough time for people to  
18 object if they wanted to, and so the agenda has been approved.  
19 A couple of Other Business items. For those of us who sign in  
20 for attendance here, we have the sign-in sheet, and there is  
21 four pages to it, and so don't lose any of them. I will pass  
22 that to my right.

23  
24 Secondly, as I think Steven had put out in emails, we have this  
25 report of the National SSC Workshop on uncertainty and related  
26 to data and climate change and ecosystems, and it's a nice  
27 little report. I think Will actually attended it as well, and  
28 there is a number of copies over there next to the podium, and  
29 so you may pick those up at your leisure.

30  
31 The first agenda item is Election of Chair and Vice Chair.  
32 Because Luiz isn't here, he is automatically elected. Actually,  
33 he and I have both agreed to carry on, at the desire of the SSC.

34  
35 **MR. GILL:** Do you want to do these separately or together?

36  
37 **DR. J. POWERS:** Let's do them together.

38  
39 **MR. GILL:** Every time I do that, I get voted down.

40  
41 **MR. ATRAN:** Before you do that, is there anybody else who would  
42 be interested in running for either the Chair or the Vice Chair?  
43 If not, I don't see any reason not to do them together. If  
44 there is, we need to do them separately.

45  
46 **MR. GILL:** In that case, I move that we nominate Luiz Barbieri  
47 and Joe Powers as Chair and Vice Chair, respectively, by  
48 acclamation.



1  
2 **SSC MEMBER:** I second the motion.

3  
4 **DR. J. POWERS:** Is there any discussion? If not, again, the  
5 suggestion was vote by acclamation, and so if there is any  
6 objections to this from the webinar people or anybody here, then  
7 let me know quickly.

8  
9 **MR. ATRAN:** Just for your information, under our procedures that  
10 the SSC adopted, the Chair can be elected to two consecutive  
11 terms and the Vice Chair can be elected to two consecutive  
12 terms, and so Joe and Luiz are now starting their second term  
13 apiece, and so, next year at this time, we are going to have to  
14 elect a new Chair and a new Vice Chair, and so it's not too  
15 early to start thinking if you want to be that Chair or Vice  
16 Chair.

17  
18 **APPROVAL OF MINUTES**

19  
20 **DR. J. POWERS:** Again, the next agenda item is Agenda Item III,  
21 Approval of the Minutes. Again, this will have to be -- We will  
22 have to administratively deal with this, in terms of the  
23 webinar, but there are four minutes that are in front of us.  
24 One of them is the Standing Reef Fish and Socioeconomic Panel,  
25 and that is not going to be brought up until tomorrow, and so,  
26 therefore, a number of people might not be available until  
27 tomorrow, and so I would say Item c there, let's wait until  
28 tomorrow to approve those minutes.

29  
30 Item a, the January 6 to 8, 2015 Standing, Reef Fish, and  
31 Mackerel SSC Meeting Minutes, and those are in the materials  
32 that were distributed on the website, is there a motion to  
33 approve?

34  
35 **SSC MEMBER:** Motion to approve.

36  
37 **SSC MEMBER:** Second.

38  
39 **DR. J. POWERS:** We have a second. Are there any objections to  
40 approving these minutes as written?

41  
42 **MR. ATRAN:** A clarification. 3a, and these are in the sub-folder  
43 called "Minutes of Previous Meetings", is the Standing, Reef  
44 Fish, and Mackerel from January of 2015, and we do have the Reef  
45 Fish and Mackerel people here. 3b is is Standing, Socioeconomic,  
46 and Shrimp. Shrimp will be covered tomorrow morning. We don't  
47 have all the Shrimp folks here, and so I think you wanted to  
48 delay that. 3c is verbatim minutes for 3b. We were trying to

1 do verbatim minutes on that, and so that probably also should be  
2 delayed, and so 3b is the last Reef Fish SSC meeting, and so  
3 it's 3a and 3b really that we need to be approving right now,  
4 and the others we can do tomorrow morning.

5  
6 **DR. J. POWERS:** Okay. That's fine with me, although how do we  
7 approve verbatim minutes? Anyway, we will deal with that  
8 tomorrow. Then the next item was the Standing and Reef Fish SSC  
9 Webinar from August 2, 2016. I would entertain a motion to  
10 accept these.

11  
12 **SSC MEMBER:** Motion to accept.

13  
14 **SSC MEMBER:** Second.

15  
16 **DR. J. POWERS:** Are there any objections? Good. All right.  
17 Then the minutes have been approved for Items a and d. Then b  
18 and c, we will deal with those tomorrow morning. The next  
19 agenda item is -- This is the session on the Standing and  
20 Mackerel SSC. The items that we will be talking about are the -  
21 -

22  
23 **MR. ATRAN:** Item IV, unless you want to defer this, is Selection  
24 of an SSC Representative to the Council Meeting in October.

25  
26 **DR. J. POWERS:** Let's defer it until we finish the discussion.

27  
28 **MR. ATRAN:** Okay.

29  
30 **DR. J. POWERS:** We have the Updated OFL and ABC Yield Streams,  
31 and so let's go ahead with that.

32  
33 **UPDATED OFL AND ABC YIELD STREAMS FOR GULF MIGRATORY GROUP KING**  
34 **MACKEREL FOR 2017/2018 TO 2019/2020 FISHING SEASONS**

35  
36 **DR. ISELY:** I am presenting the results of the updated OFL and  
37 ABC projections. The projections were developed by Mike  
38 Schirripa of our our staff. He produced the assessment for the  
39 Gulf of Mexico for the 2014 assessment.

40  
41 To review the previous assessment, if you look at the far-right  
42 side of the graph, this is basically a stock size history. It  
43 shows an increase in the 1980s, up to 2000, and then a decline  
44 through the mid-2000s and then an increase in recent years.

45  
46 There is no indication that the stock is currently being  
47 overfished or experiencing overfishing. Nearly all model  
48 configurations suggest that the spawning stock has been

1 increasing since 1990. Recent recruitments were estimated to be  
2 below average, and should be monitored for any long-term trends.

3  
4 The previous projections of retained catch and spawning  
5 potential ratio are presented here. The left graph shows  
6 retained catch with the three lines. The blue line is SPR 30,  
7 the red line is SPR 40, which was sort of a sensitivity run, and  
8 the green line is SPR at 75 percent of SPR 30, which is  
9 basically what's used as the ABC.

10  
11 The right side shows the relationship between the spawning  
12 potential ratio and the SPR target, and so we want this line to  
13 be above one, and it shows that in recent years that, for both  
14 SPR 30 and SPR 40, we are slightly above one. For SPR target,  
15 we are much higher than one, suggesting that we're managing the  
16 stock at above SPR target.

17  
18 One of the things to note here is these are the previously  
19 calculated OFLs and ABCs at F 30, and these are millions of  
20 pounds whole weight. The projections assume that the landings  
21 in fishing year 2013 and 2014 were equal to those in 2012.

22  
23 At the time of the assessment, we did not have landings yet for  
24 2013 or 2014, and so the assessment was completed in 2014, and  
25 we assumed that the landings were equal in 2013 and 2014 to the  
26 landings that were observed in 2012, and so we had three years  
27 of constant landings, and that's what the previous projections  
28 were based on. Here is the predictions for 2015 through 2024  
29 for both OFL and ABC under that assumption.

30  
31 In June, the council requested an updated projection for  
32 overfishing limit, OFL, and acceptable biological catch, ABC,  
33 levels for the Gulf migratory group of king mackerel for the  
34 2017/2018 fishing year and the 2019/2020 fishing year. We used  
35 the actual landings for 2013 and 2014, rather than using the  
36 2012 levels as surrogates for 2013 and 2014. Basically, all it  
37 did was update for the two years that were missing in the  
38 previous projections.

39  
40 Landings in 2015 and beyond were calculated assuming F 30.  
41 Instead of using a fixed catch for the 2014 levels, 2015 was  
42 used at catch of F 30. Other than that, the methods and models  
43 and everything were identical. The dataset was just updated,  
44 adding additional years and rerun, and so there's no changes  
45 other than those significant differences mentioned here.

46  
47 The motivation for this, over the last fifteen years, the  
48 recreational sector has not landed its annual catch limit, ACL.

1 The unharvested fish by the recreational sector has potentially  
2 resulted in projects with annually declining yield streams. The  
3 annual remainder may result in an unnecessarily low OFL and ABC  
4 projections in the following years. Periodically updating these  
5 yield streams for Gulf king mackerel will help the council  
6 manage this stock and could increase fishing opportunities for  
7 Gulf fishermen.

8  
9 Here are the actual updated landings for king mackerel, for  
10 total landings for fishing year 2013 and fishing year 2014, and  
11 they both exceeded the value for 2012 used in the previous  
12 model.

13  
14 If you look in the first columns, underneath the yellow, which  
15 is hand-line, you see the 2012 value was 1.7 million pounds, and  
16 so that was used again for 2013 and 2014. The 2013, in the  
17 yellow portion, is the assessment year, and so the assessment,  
18 in 2013, used 2012 landings for both 2013 and 2014. 2016 used  
19 the landings that were observed for the recreational fleet, hand  
20 lines, and they went from 1.7 to 1.8 and 2.4 million pounds,  
21 respectively.

22  
23 For gillnet, it went from 0.4 to 0.6 in 2013 and remained 0.4 in  
24 2015. For headboat, the 2012 levels were at 16,000 fish, and  
25 the observed levels for 2013 and 2014 dropped to 11.9 and then  
26 increased to 20.2 million fish for the 2017 update. Charter and  
27 private was 310,000 fish in 2012, and so that was used for the  
28 2013 surrogates for 2013 and 2014. In 2016, it decreased to  
29 263,000 fish, and then it increased to 431,000 fish, as actuals.  
30 Does everybody follow that?

31  
32 Basically, we have exchanged the values on the left in each one  
33 of those columns for the values on the right in the updates, and  
34 so here is the updated projections, the OFL and ABC at 30  
35 percent FSPR reference, in millions of pounds whole weight. The  
36 original assessment, original OFL from the 2013 assessment --  
37 Instead of saying "2013", it says "original".

38  
39 In the yellow portion, that is what the assessment in 2013  
40 projected for the 2017, 2018, and 2019 fishing years for OFL and  
41 ABC. The updated OFL and ABC are presented in the blue on the  
42 right side. If you notice, they are actually below the levels  
43 from the 2012 assessment, and that's partly because of the  
44 increase in catches in 2014 and in 2013 over what were projected  
45 in most of the cases. It also has the result of somewhat of a  
46 decline in confidence intervals in the model, and so, even  
47 though we would expect higher catches, the model has better  
48 predictions, and it's coming up with slightly lower references.

1  
2 This is the OFL and ABC distributions. The green histograms are  
3 the model results, and the red line is the cumulative  
4 distribution function for those, and the OFL and ABC were pulled  
5 off of these plots. Given this distribution, they pulled off  
6 basically the 50 percentile off of each of these graphs. The  
7 predictions for 2017 are in the upper left, 2018 is the upper  
8 right, and 2019 is the lower center. These are basically just  
9 the modeling results.

10  
11 In conclusion, on average, the actual 2013/2014 fishing year  
12 landings were approximately 12 percent higher than the 2012  
13 landings that were used in the original ABC calculations done in  
14 2013. This resulted in updated ABCs for 2017 through 2019 being  
15 approximately 4 percent lower than the original values that were  
16 calculated in 2013. Due to the timing of the request, and it  
17 came in during July, fishing year 2015 data were not yet  
18 available to be included in this analysis, although they were  
19 requested. I believe that's it, and I will be happy to take any  
20 questions.

21  
22 **MR. ATRAN:** I think this will be an easy one. In Slide 5, you  
23 had said for 2015 that you assumed landings at F 30 percent. If  
24 you actually did the landings at F 30 percent, that would have  
25 been the OFL. Are we using the OFL or the ABC landings for that  
26 year?

27  
28 **DR. ISLEY:** I'm getting to the slide here. You're talking about  
29 the three lines on the slide or which --

30  
31 **MR. ATRAN:** You had assumed the same landings were going to be  
32 held for 2013, 2014, and 2015 before, and so, here, you're using  
33 the actual landings for 2013 and 2014. Then, for 2015 and  
34 beyond, you calculated assuming F 30 percent SPR. The thing is,  
35 if you fished right at F 30 percent SPR, that would be  
36 equivalent to the OFL and not the ABC, and so my question is  
37 were you using the OFL landings or were you using the ABC?

38  
39 **DR. ISELY:** This says OFL, I agree, but I'm pretty sure they  
40 used the ABC. It was 75 percent F 30. I will make sure, but  
41 they should have been fishing at ABC and not OFL, and I'm sure  
42 that's what he used, but it just doesn't say that here. I  
43 missed that.

44  
45 **MR. ATRAN:** Yes, and they're probably assuming 75 percent of F  
46 30.

47  
48 **DR. ISELY:** Right, which is what's on the graph right above

1 that, two slides above that, and that's why it was on there.  
2  
3 **DR. J. POWERS:** Sean.  
4  
5 **DR. S. POWERS:** What are the projections assuming -- How does it  
6 assume recruitment? How does it deal with recruitment? Is it  
7 predicting below-average recruitment?  
8  
9 **DR. ISLEY:** Recruitment was held the same it was in the previous  
10 assessment, which I believe is a constant recruitment in the  
11 projections, and so it was constant, based on average  
12 recruitment, for the previous three years of data.  
13  
14 **DR. S. POWERS:** Just to follow up, so it's predicting low  
15 recruitment, if it's the last three years of data?  
16  
17 **DR. ISELY:** Yes, but that's consistent with what it did in the  
18 previous projections. It made no changes to the model.  
19  
20 **DR. J. POWERS:** Will.  
21  
22 **DR. PATTERSON:** If I've got this all right, the council looked  
23 at the declining projections over time, and they said, while the  
24 recreational fishery historically didn't land its allocation,  
25 and so we should update this and that might prevent some of that  
26 stepping-down, but then, when you looked at the landings in 2013  
27 and 2014 for the recreational sector, they were actually higher  
28 than what you had projected, and so that actually ends up with a  
29 decrease in OFL and ABC.  
30  
31 **DR. J. POWERS:** Walter.  
32  
33 **DR. KEITHLY:** Thank you, Jeff. Maybe you can help me out,  
34 because I may be confused. The last slide says there was about  
35 a 4 percent reduction in ABC, but, looking at the table before  
36 that, it looks to be closer to a 20 percent reduction in ABC  
37 from the original to the updated. Can you help me out there?  
38  
39 **DR. ISELY:** I am looking at the conclusions and then the table,  
40 and so which --  
41  
42 **DR. KEITHLY:** I guess it goes back to the subsequent table  
43 toward the end.  
44  
45 **DR. ISELY:** Slide 8, the one with the yellow and the blue.  
46  
47 **DR. KEITHLY:** Am I missing something?  
48

1 **DR. ISELY:** Walter, what's the question?  
2

3 **DR. KEITHLY:** The conclusion slide said that the updated ABCs  
4 are only about 4 percent less than the original ABC, but,  
5 according to this table, it looks like closer to a 20 percent  
6 reduction.  
7

8 **DR. ISELY:** I am not sure where Michael calculated his values.  
9 I will check with him and find out, but those are the actual  
10 values on the slide, and so the percentages may be off in the  
11 conclusion slide, but these are actual results of the  
12 projections.  
13

14 **DR. J. POWERS:** The conclusion slide, if you flip to the  
15 conclusion slide, it actually says there that 4 percent relative  
16 to the 2017 through 2019, and the table you were looking at  
17 before was 2016, as I recall. No, you're right.  
18

19 **MR. ATRAN:** The updated ABCs are about 4 percent below the  
20 updated OFLs, and so is maybe the slide mislabeled?  
21

22 **DR. ISELY:** Yes, the percentage may be looking at two different  
23 columns, and so it should be ABC-to-ABC, as opposed to ABC-to-  
24 OFL. I will check with Michael and find out what the 4 percent  
25 refers to.  
26

27 **DR. J. POWERS:** That would be helpful. Are there any other  
28 questions?  
29

30 **DR. SIMMONS:** Thank you, Mr. Chairman. How were the MRIP  
31 calibrations for the recreational landings handled in both the  
32 stock assessment again and in this updated projections for the  
33 2013 and 2014 landings? Were there calibrations applied to that  
34 for the recreational sector?  
35

36 **DR. ISELY:** For this assessment, no, because we used the  
37 identical method that was conducted in 2013. This spring,  
38 however, there was a separate analysis looking at the effect of  
39 MRIP recalibration on the previous projections, and so  
40 recreational values were back-calculated to see how they  
41 affected the projections from the past assessment, but they were  
42 not recalculated for this. The only change was the update in  
43 the 2013 and 2014 landings. That is the only change in this  
44 model.  
45

46 **DR. J. POWERS:** Any other questions or comments? What is the  
47 council looking for here, Steven?  
48

1 **MR. ATRAN:** If you read the scope of work, it says that the SSC  
2 should review the projections and either make new OFL and ABC  
3 recommendations or reiterate the existing recommendations.  
4

5 **DR. J. POWERS:** This exercise, to me, is showing that, by  
6 assuming something about the catches, low and behold, it changes  
7 things, and, at this point, I guess I am not real confident in  
8 terms of how to move forward with this. Yes, the catches were  
9 about right, but they're a little high. Next year, they may be  
10 about right, but a little low. I am looking for some guidance  
11 here that we can respond to the council.  
12

13 **DR. S. POWERS:** In the past, when we've received updated OFLs  
14 and ABCs that have differed from what the projections were, we  
15 have offered new OFLs and ABCs, to be consistent, when we have  
16 evidence.  
17

18 **DR. J. POWERS:** Thank you, Sean. Jim.  
19

20 **DR. TOLAN:** Is it a recreational sector behavioral-based reason  
21 that they're not getting their full harvest, because I know a  
22 lot of the bigger kingfish, a lot of the recreational guys don't  
23 want them, because of the mercury issue. If that's the case,  
24 then these represent the updated numbers, and clearing up the  
25 issue that Walter brought up between the 4 percent and the 20  
26 percent reduction, they are in line with what the catch really  
27 ought to be, but, if it's a behavioral-based issue, then really  
28 I think it's out of our hands. We could just go to the council  
29 and say these are the numbers.  
30

31 **DR. J. POWERS:** Will.  
32

33 **DR. PATTERSON:** I'm just having a hard time trying to figure out  
34 what's going on to drive these numbers, because if you look at  
35 the projections for the updated OFL, you go 756, 757, 758, and  
36 so there's a slight increase there in the update, but it would  
37 also suggest that, since you're hitting pretty much the same  
38 number, that the stock biomass must be near the proxy, the 30  
39 percent SPR.  
40

41 If I recall, when the assessment was done in 2013, spawning  
42 stock biomass was well above the threshold. In those couple of  
43 years of updated catch, it doesn't seem -- Did the recreational  
44 fishery overrun its allocation, its ACT? It doesn't seem like  
45 there's that much of an increase in removals that would suggest  
46 the stock was really rapidly fished down to basically the  
47 threshold value for biomass. I just don't see how that could  
48 happen in a couple of years, with that level of difference in



1 catch. Maybe I am misremembering where spawning stock biomass  
2 was estimated to be.

3

4 **DR. J. POWERS:** Jeff.

5

6 **DR. ISELY:** The previous slide, the one that has 2013 and 2014  
7 assumptions, the catches for hand-line were about 700,000 pounds  
8 higher in 2014. It was basically about a 50 percent or 40  
9 percent increase, and gillnet is pretty minor, and both headboat  
10 and charter increased by about 25 percent, and so that's a  
11 pretty substantial increase in catches, and I think basically,  
12 if they're pushing it towards the OFL, then they're going to  
13 reduce the projections in the future, and so I don't know --  
14 Regardless, if they had stayed the same, then we would have the  
15 same projections, but the yields went up, and I don't know if  
16 there is any accompanying catch per unit effort data or anything  
17 else that would suggest that the whole stock is recovering, but,  
18 if everything else remains the same and the catches go up, then  
19 the projections are going to go down.

20

21 **DR. PATTERSON:** Yes, I understand that part, but it's just it  
22 seemed to me that the spawning stock biomass was so much above  
23 BMSY that, even with this level of change --

24

25 **DR. ISELY:** I have a background presentation that I will look at  
26 and see if I can't provide some more information in a few  
27 moments, but I don't want to delay the meeting while I look it  
28 up.

29

30 **SSC MEMBER:** Could it be a modeling artifact of the built-in  
31 constant low recruitment that's used for this?

32

33 **DR. ISELY:** The recruitment should have been updated to the  
34 updated data as well, and it's really the recent average  
35 recruitment that was low, but, yes, it's not a -- The  
36 assumptions in the model were the same, and so it was basically  
37 an update assessment, is what it was, without reviewing or a big  
38 data workshop or anything else.

39

40 I don't know what to say, other than it's the same assumptions  
41 about recruitment that were made for the previous update or  
42 previous projections. I don't think he changed it to be  
43 increasing recruitment. Nothing changed. It just seems that,  
44 with higher catches, you would expect lower OFLs in the future.

45

46 **MS. GERHART:** I just wanted to point out a little bit about the  
47 landings. In 2014, we had exceptionally high recreational  
48 landings, as is reflected in this table up here. We went from

1 38 percent of the ACL landed in 2013 to 63 percent landed, and  
2 so there was almost a doubling of those landings.

3  
4 We came back in 2015, and we're back down to the normal again,  
5 and so 2014 was sort of, for landings, an aberrant year for the  
6 recreational sector. The commercial was pretty much steady, but  
7 I would like to point out that, even so, they were only at 63  
8 percent of their ACL in 2014, and so they weren't even hitting,  
9 and the ACL is equal to ABC, and so they weren't even coming  
10 close to there yet, and so it seems sort of odd that that would  
11 cause such a drop in the OFL and the ABC.

12  
13 **DR. J. POWERS:** Thank you. First, I have Melissa on the webinar  
14 and then Shannon.

15  
16 **MS. RECKS:** I would basically like to reiterate what she just  
17 said, because that was the question that I had. I understand  
18 that the recreational catch has gone up, and, with the catch  
19 going up, that affects the future projections. However, as you  
20 said, the recreational catch is still only at 63 percent of  
21 their quota, and so that would lead one to believe, if this  
22 fishery goes anywhere near its quota, it will have substantial  
23 drops in future OFL.

24  
25 That doesn't make sense to me. I would think that it would be  
26 calculated such that, if you're staying below the quota, your  
27 overfishing limit shouldn't keep dropping in subsequent years,  
28 and I don't understand how the model is working if this is the  
29 case. I think there is something counterintuitive going on here  
30 with the model.

31  
32 **DR. J. POWERS:** Jeff, do you want to respond to that?

33  
34 **DR. ISELY:** I kind of agree with it, and so I need to look into  
35 this and see what's going on. Again, if we predict future  
36 constant low recruitment and we have increases in catches, then  
37 it suggests we're pushing the limits, but it shouldn't affect  
38 the OFLs like that. If you're still below an OFL, then, if  
39 anything, the ABCs should increase, and they didn't, and so I am  
40 going to pull up the previous presentation and then contact  
41 Michael and ask him to clarify some of this.

42  
43 **DR. J. POWERS:** Somebody remind me also, what is the allocation  
44 split between recreational and commercial? Is it still 70/30 or  
45 68/32 or whatever? Okay. Thank you. Shannon.

46  
47 **DR. CALAY:** Thank you. I just wanted to correct, for the  
48 record, that I don't think this is an update assessment, per se.

1 I think this is what we call an update of the projections.  
2  
3 **DR. ISELY:** Yes.  
4  
5 **DR. CALAY:** I don't think that all of the data inputs were  
6 updated, and so recruitment assumptions would remain as they  
7 were, I believe, during the previous assessment, but we could  
8 ask Michael for a list of anything that was modified during this  
9 assessment.  
10  
11 **DR. J. POWERS:** Thank you. Will, did you have a comment?  
12  
13 **DR. PATTERSON:** I was just going to say, about the lower  
14 recruitment, I think the productivity, obviously, that we're  
15 projecting a less-productive stock into the future. Even if you  
16 don't hit your current ACL, if you're projecting lower  
17 recruitment, then obviously that's going to drive future biomass  
18 as well, but that number -- Only 68 percent of the ACL, which  
19 is, again, buffered from ABC and buffered from OFL, and so we've  
20 seen, in other fisheries, the ACLs end up being around 60  
21 percent -- I mean the F ACL is about 60 percent of the FMSY, and  
22 so we're not hitting the ACL, but that's buffered well below the  
23 yield at FMSY already.  
24  
25 **DR. J. POWERS:** All right. Any other comments? Steven.  
26  
27 **MR. ATRAN:** This may not be that important. I was just looking  
28 at the updated OFLs and ABCs on Slide 8, and I noticed that, for  
29 the three-year period -- As Will pointed out, they hardly change  
30 at all, but, to the extent that they do, OFL is going up, but  
31 ABC is going down. That seemed a little strange to me.  
32  
33 **DR. J. POWERS:** I guess my reaction to a lot of this is a lot of  
34 this is going to depend on recruitment assumptions. Over the  
35 short term, what the recruitment assumption is saying is, more  
36 or less, it's going to stay at the average that has occurred  
37 most recently, and that most recent period of time has been  
38 below the long-term average, and so one would expect -- In fact,  
39 that was the advice that was given in one of the first slides, I  
40 guess it was, that you can't expect this to go on forever.  
41  
42 I think what are our decision points? Basically, the guidance  
43 that were given is either modify the OFL and ABC for 2017 to  
44 2019 or don't modify it and say why, or I guess we could ignore  
45 the council, but I wouldn't advise that. By the way, Luiz has  
46 rejoined us, for people on the webinar, but I will handle this  
47 discussion, until we go to the next agenda item. Will  
48

1 **DR. PATTERSON:** It doesn't seem like we have enough information,  
2 until we hear back from Jeff's questions to Michael, to adopt  
3 this as a better approach than what we already have on the books  
4 for the projections. I don't see how we can do that until we  
5 have some of this other answered.

6  
7 **DR. J. POWERS:** Can we, in this meeting, be able to do that?  
8 Can we kind of revisit this tomorrow morning? Will the agenda  
9 allow that?

10  
11 **MR. ATRAN:** Yes, we can do that. The only question is I know  
12 that Melissa Recks had indicated that she only was going to be  
13 on the webinar for the Mackerel SSC, and so, if we're going to  
14 come back to this tomorrow, since she is a Mackerel SSC member,  
15 would she be able to make it?

16  
17 **DR. J. POWERS:** Melissa, just a second. Jeff, in terms of  
18 responding to this, are we talking about tomorrow morning, or is  
19 there some optimism about later this afternoon?

20  
21 **DR. ISELY:** In fact, there is more pessimism. Shannon just  
22 informed me that Michael is on leave for a while, a couple of  
23 weeks, on annual leave, and will not be in communication. We're  
24 kind of on our own, but I have a slide I would like to show from  
25 the previous assessment that I think might be informative here  
26 and help answer some questions.

27  
28 **DR. J. POWERS:** There are some technical issues about putting  
29 this on the screen. In the meantime, Steven had said that we  
30 need to make some decision about who is going to present what at  
31 the council meeting. Steven.

32  
33 **MR. ATRAN:** We need to decide who is going to be the SSC  
34 representative at the October council meeting, and they would  
35 have to be there for the Reef Fish, Shrimp, and Mackerel  
36 Committees, which I believe would probably be Monday, Tuesday,  
37 and Wednesday. It would be Monday and Tuesday, at any rate.

38  
39 **CHAIRMAN LUIZ BARBIERI:** Just to clarify, I am not available to  
40 attend that meeting, just because that same week is the South  
41 Atlantic Council SSC meeting, and so I'm going to have to be  
42 there. We only meet, the South Atlantic, twice a year, once in  
43 spring and once in fall, and so, if I miss this one, I am going  
44 to miss a lot of decisions there that I would like to be part  
45 of.

46  
47 **DR. J. POWERS:** Where is it?  
48

1 **MR. ATRAN:** It's in Biloxi. You get an all-expense-paid trip,  
2 except for your gambling costs, to a resort casino in Biloxi.

3  
4 **DR. J. POWERS:** No problem there. I always win. No.  
5 Tentatively, I will be able to do it. Let me check something,  
6 but, tentatively, I would do that. Is everybody happy with  
7 that? All right. For those on the webinar, we are delayed here  
8 while we try to get a slide up, and so have patience.

9  
10 **MR. ATRAN:** While we're waiting, I just thought I would quickly  
11 go over the tentative schedule of SSC meetings that are coming  
12 up. There are two items on the server regarding this. It's  
13 Items XIV and XIV(a). One thing is that, after this meeting, we  
14 have an SSC meeting that normally would have been in January,  
15 three weeks before the January council meeting, and Doug Gregory  
16 had suggested that we hold it in December, before the holiday  
17 season, so that people wouldn't have to work over the holidays,  
18 and so we had tentatively moved it back to December.

19  
20 Now, it turns out that it's not really going to affect people's  
21 workloads after all, and we do have some analysis that we want  
22 the SSC to look at that can't be ready until January, and so our  
23 choices, at the moment, are to hold the next SSC meeting the  
24 week of December 13, the second week in December, or hold it the  
25 week of January 10, and I wanted to see if anybody had any  
26 particular preference as to when they hold it. As I said, right  
27 now, it looks as though we need to hold it in January, in order  
28 to get certain analysis from the Science Center.

29  
30 **DR. J. POWERS:** Jeff.

31  
32 **DR. ISELY:** I think I'm ready, and I would like to look at this  
33 slide here. As a point of clarification, as Shannon said, this  
34 was not a full update. The previous projections were run using  
35 results of the 2013 assessment, making assumptions about the  
36 catch in 2013 and 2014, and so the projections were made using  
37 dummy catches in those two years.

38  
39 This assessment only put in actual catches for dummy catches in  
40 those two years. That's it. It's still using the results of  
41 the 2013 model, and it's still using those values in 2013 and  
42 2014 that make projections into the future. It did not update  
43 CPUE indices and it did not update the recruitment frame. It  
44 did not update any other parameters in the model. It only  
45 updated those two catches.

46  
47 If you look here, we basically are showing declining recruitment  
48 in the recent years, and those are the levels of recruitment

1 that were being used for the projections. If catch goes up,  
2 with those same low recruitments, we're going to be driven  
3 closer to the MSST line, and it's going to reduce the ABCs.  
4 Will.

5  
6 **DR. PATTERSON:** All that taken, you're still two-and-a-half  
7 times the MSST value, and so, given that, I don't understand how  
8 the next couple of years of OFL are basically the same. You're  
9 indicating you're already there, or that recruitment is going to  
10 be so low that you're going to be there. If recruitment is  
11 going to be lower projected into the future, then you should be  
12 dropping that MSST value.

13  
14 **DR. ISELY:** MSST is the minimum stock size threshold. It's not  
15 the target.

16  
17 **DR. PATTERSON:** Sure, but it's the SSB MSY adjusted for natural  
18 mortality, because natural mortality is not changing, and so we  
19 can still use it as a proxy here.

20  
21 **DR. ISELY:** But the MSST line is staying the same for the  
22 projections. The only thing that's changing is the blue line  
23 above it, and it's going to continue to go down more than what  
24 it does in that picture, because the catches have increased.

25  
26 **DR. PATTERSON:** Okay. Still, you're so far above it. How can  
27 the OFL projections in the near term basically be constant?  
28 You're basically saying that, in the near term, you would be  
29 there and you would be fishing right at it.

30  
31 **DR. ISELY:** I don't know. I want to say it's an artifact of the  
32 projections, but there is something real about it. Basically,  
33 this procedure has been accepted, and the results were accepted.  
34 The only thing that has changed -- None of the assumptions have  
35 changed. The only thing that has changed is those landings  
36 values for those two years. There are no other additional data.  
37 The data streams are not extended any farther out, and so, if  
38 you have caught more than what you expected to catch, then it  
39 suggests the future is going to mean that you catch less, in a  
40 projection point of way.

41  
42 **DR. J. POWERS:** Thank you, Jeff. It sort of reminds me that,  
43 basically, these are not assessments, and you get what you pay  
44 for. Given that snarky comment, Bob.

45  
46 **MR. GILL:** Thank you, Mr. Chairman. We have talked about  
47 increasing landings, but, if you look at the cumulative increase  
48 in landings for both years, they're not all that big. In fact,

1 the only one that's really significant is the hand line, and  
2 it's 20 percent, roughly, and 10 percent for the charter/private  
3 sector, and so we're not talking about a real dramatic increase  
4 in landings cumulatively over the two years. I am little hard-  
5 pressed to understand why 20 percent would have such a drastic  
6 impact, and I guess I'm coming from where Will is coming from.

7  
8 **DR. ISELY:** Charter/private went from 310,000 to 431,000, and so  
9 that is a one-third increase.

10  
11 **MR. GILL:** But if you add them together, and I'm talking about  
12 the cumulative for both years, you've got 620,000 for 2013, and  
13 you've got 695,000 for the 2016 number, and so that's like a 10  
14 percent increase, and you need to include both of them, because  
15 it represents what happened in two years and not just one year  
16 of change.

17  
18 **DR. ISELY:** That's true, but this is an age-based assessment,  
19 and so all fish are not equal. A fish in 2013 is a year older  
20 in 2014, and the impacts of its removal are greater, and so it's  
21 not just a pounds thing.

22  
23 **DR. PATTERSON:** I think there might be something else to that.  
24 If that big increase were mostly larger, older fish in the  
25 recreational, and that's thousands of fish, then you're removing  
26 a lot of eggs that you are projecting. That's the only thing  
27 that I could come up with that could get you that much of a drop  
28 in a couple of years' difference.

29  
30 **DR. ISELY:** I can ask Michael to review the projections, but,  
31 when you take what you did last time and change four numbers and  
32 rerun it, there's really not a lot to review. The assumptions  
33 of those projections have been gone through with a fine-tooth  
34 comb during the assessment and accepted and approved, and  
35 approved by the review panel, the CIE review, and so this is  
36 basically, at the council's request, put in these updated  
37 catches and see what happens.

38  
39 We're talking about a lot of fine points in the projections,  
40 which basically we're starting to get into what does the SS  
41 model do, and that's beyond the purview of this analysis, and so  
42 I'm sure sensitivity runs were done during the assessment that  
43 looked at the impacts of increasing or decreasing catches during  
44 that 2013/2014 period on what would happen to the ABCs. We can  
45 go back to that assessment and look at those sensitivity runs,  
46 but I wasn't prepared to do that today. This is basically in  
47 response to the council's request.

48

1 **DR. J. POWERS:** I think we understand that, and these are the  
2 set of data and this is what was asked. Still, the SSC needs to  
3 kind of balance this out, in terms of the basic question that's  
4 being asked of should we change those OFLs and ABCs or should we  
5 not?  
6

7 **CHAIRMAN BARBIERI:** I was going to suggest -- I understand  
8 Jeff's point, but I was going to suggest that perhaps, if the  
9 council would accept us postponing this decision until after  
10 Michael is back and we can look into more of the details -- I  
11 had a quick call with Melissa Recks this morning, and she had a  
12 few questions about catching the quota or not, and your  
13 assumptions regarding the configuration of the projections, and  
14 I couldn't really find all of those details, because we didn't  
15 have a little report for that, and so I understand the issue,  
16 but I think that, if the council can wait a little longer,  
17 perhaps we can have a more detailed discussion later, at a later  
18 meeting.  
19

20 **DR. J. POWERS:** Shannon.  
21

22 **DR. CALAY:** I actually think that's a good idea. Michael will  
23 be back in town shortly. There are some complications to any  
24 update that includes allocations, and so I think having a list  
25 of questions from the SSC or concerns to help us investigate  
26 this in a small report, we would feel more confident that we  
27 were providing the SSC with good documentation.  
28

29 **DR. J. POWERS:** Okay. Essentially, what is being asked here is  
30 some better explanation, so we in the SSC can understand sort of  
31 the tradeoffs between things that are going on in the model,  
32 but, again, it's a projection based on a set of assumptions,  
33 and, like I said, to me, the biggest one may not be the catches  
34 themselves, but rather the recruitment assumption.  
35

36 **DR. CALAY:** One thing that happened is, when you have an  
37 allocation specified in our projections, we typically try to  
38 hold those allocations during the projection, and, once you  
39 update those projections with actual landings, those allocations  
40 are no longer retained. If the two fisheries had very different  
41 selectivity patterns, unexpected things can happen, but what I  
42 am suggesting is we take a closer look at that behavior, so that  
43 we can have an understanding of these unexpected results.  
44

45 **DR. J. POWERS:** All right. I am feeling a sense here that  
46 people want to delay on this, in terms of responding to this.  
47 Is that acceptable?  
48



1 **MR. ATRAN:** I think so. Carrie, is there any critical element  
2 to delaying a decision here?

3  
4 **DR. SIMMONS:** No. If the SSC is not ready to make a decision  
5 now, and I think there's been a lot of stuff that's come up, I  
6 think that's fine to wait. I think staff and the council  
7 thought this was going to be pretty straightforward and cut-and-  
8 dried, and so I apologize for that, and, of course, nothing is  
9 ever as easy as you think it might be. We will work and see  
10 what we can do for the next SSC meeting or thereafter, when we  
11 get with Dr. Sherpa, who did the assessment.

12  
13 **MR. ATRAN:** Then we can delay it, but somebody mentioned before  
14 maybe coming up with a set of questions to address to Mike. Do  
15 you think that would be worthwhile, to have some bulleted  
16 questions or concerns that we can put in the summary for him to  
17 specifically evaluate, or just the more generic of could you  
18 please tell us what's changed?

19  
20 **DR. J. POWERS:** Shannon.

21  
22 **DR. CALAY:** That would be productive. Alternatively, we could  
23 arrange a conference call with SSC members to direct Michael.

24  
25 **DR. J. POWERS:** My feeling is it wouldn't be real productive to  
26 try to formulate these questions right here at this committee  
27 right now, and so if we could have either some phone call later  
28 on or, if somebody wants to get very motivated, they can put  
29 together a list tonight. I guess it's a phone call. Jeff.

30  
31 **DR. ISELY:** I am willing to try to compile questions, if you  
32 want to send them directly to me at my email. Then I will try  
33 to summarize things that we want to go forward with. I think we  
34 need clear questions. Otherwise, we're going to get ambiguous  
35 answers, and we will be right where we are now. If there are  
36 specific concerns, I need detailed questions asking specific  
37 responses from Michael, so that he can look at those. It  
38 doesn't have to be by tomorrow, but send them to me, and I will  
39 work them up.

40  
41 **DR. SIMMONS:** I'm a little scared to ask this question, but I  
42 guess I have a bigger concern with workload and stuff like that.  
43 Are we reaching the point that this is essentially an update and  
44 that we would have to go through the Steering Committee process,  
45 or is this something that Shannon and Mike could do without  
46 going through a full update at this point? I am hearing a lot  
47 of these things weren't included and it wasn't a true update and  
48 all these other concerns with recruitment, and all of that needs

1 to be updated, I would think, and so is this really an update  
2 assessment the council is asking for? If so, we should have  
3 that piece of information before we go back to the council.  
4

5 **DR. J. POWERS:** My feeling would be let's collate the questions  
6 and make that decision then. I would hope it isn't an update.  
7 Are there any other comments? Basically, we are delaying  
8 action. We are suggesting that a list of questions of how to  
9 approach this problem be put together and that Jeff Isely will  
10 compile that list, with input from others, and we may need to  
11 have an actual phone call to finalize that list. The goal would  
12 be then to revisit this at the next SSC meeting. With that,  
13 Luiz now takes over as Chair.  
14

15 **CHAIRMAN BARBIERI:** Good afternoon, everybody. My apologies for  
16 not being at the beginning of the meeting. I had to participate  
17 in the SEDAR Steering Committee momentarily, but I am back, and  
18 I appreciate Joe stepping up to the plate and spotting me for  
19 this first hour-and-a-half or so.  
20

21 We have just concluded the Standing and Mackerel SSC Session.  
22 We have direction forward, and this brings us to the Standing  
23 and Reef Fish SSC Session #1. Steven, should I go ahead and  
24 reread the Chairman's statement?  
25

26 **MR. ATRAN:** No, I think Joe did a very good job of just  
27 summarizing everything that's on the introductory statement, and  
28 everybody is here who was here at the start of the meeting,  
29 except for you, and so we can just go forward with the agenda at  
30 this point.  
31

32 **CHAIRMAN BARBIERI:** Okay. Wonderful. We are going to start  
33 then the Standing and Reef Fish SSC Session #1 with a  
34 presentation on the Goliath Grouper Benchmark Assessment. We  
35 have Joe O'Hop here from the FWC/FWRI Stock Assessment Team. Do  
36 you have a question there, Jim?  
37

38 **DR. TOLAN:** Before that presentation gets off, did we make any  
39 resolution to the meeting date that you opened up earlier?  
40

#### 41 **DATES FOR NEXT SSC MEETING**

42

43 **MR. ATRAN:** No, Jeff came back with his slides, and so I thought  
44 we abandoned it, but if you want to, does anybody have any  
45 problem if we go back to our original meeting date for the next  
46 meeting, which was going to be the week of January 10, I  
47 believe? If that's acceptable to everybody, that will be the  
48 next SSC meeting date.

1  
2 I also have, and I won't get into it now, because we're going to  
3 get into goliath grouper, but, this morning, I uploaded a  
4 tentative 2017 list. Now, I know that the days that I put down  
5 for March are going to have to be changed, because, if we go by  
6 our normal procedure of having the SSC meeting three weeks  
7 before the council meeting, we're in conflict with the Gulf  
8 States Marine Fisheries Commission meeting, and so that one will  
9 definitely have to be changed.

10  
11 The rest of these, unless somebody has any real problem with  
12 them, we can probably stick with this. You will see two of  
13 those do cover the third week of the month, and one of our SSC  
14 members, and I think it was Bob, and I'm not sure, had a  
15 conflict on the third Tuesday of each month. Do you still have  
16 that conflict, Bob? We can address that when we get to it.

17  
18 As I said, these are tentative until we start to get closer to  
19 them. Like I said, the next meeting will be the week of January  
20 10 to 12, if you say that's okay with you folks. The one in  
21 March will probably be rescheduled either the week before or the  
22 week after the Gulf States Commission meeting, and then we will  
23 take it from there. Also, our location, by default, is here in  
24 Tampa, unless we have good rationale for going somewhere else.  
25 We can go somewhere else, but we have to have a good reason to  
26 do so.

27  
28 **CHAIRMAN BARBIERI:** Thank you, Steven. Just a reminder that we  
29 have an actual agenda item dealing with this, and so if you want  
30 to, overnight, take a look at the schedule, as proposed, and  
31 then raise some potential concerns tomorrow, that would be  
32 great. Now we are ready for Joe O'Hop. Hopefully you folks  
33 have had a chance to read the goliath grouper benchmark  
34 assessment report as well as the item that is in our scope of  
35 work.

36  
37 This assessment, this is the third, I believe, benchmark  
38 assessment attempt with goliath grouper, and this one was  
39 rejected by the review panel as well. The first one was aborted  
40 before completion, the second one was rejected by the review  
41 panel, and the third one as well, for different reasons, I  
42 believe, and I am not sure whether -- I did not look for them,  
43 for the CIE review reports from the individual reviewers, if  
44 those had been available to the committee, but they present some  
45 concerns.

46  
47 This is one of the reasons, by the way, that I was earlier  
48 discussing with the SEDAR Steering Committee. There had been

1 several recommendations that FWC start being more participatory  
2 in the SEDAR process, through the usual standard three  
3 assessment process for benchmark assessments, because what  
4 happens is the opportunity for stakeholders and other interested  
5 parties to be more involved in the assessment process and for us  
6 to have terms of reference that have benefitted from the input  
7 of this committee and the other SSCs that participate and  
8 perhaps a more inclusive process for some of these decisions  
9 that have been made regarding, like any assessment, that we have  
10 a number of decisions that have to be made along the way, and  
11 the reviewers felt that having something that is more inclusive  
12 of those other workshops would be beneficial.

13  
14 We agree with this process. We actually have requested, and  
15 just received approval, from the SEDAR Steering Committee to  
16 actually proceed accordingly with a benchmark assessment for  
17 black grouper as well, which was originally scheduled to be  
18 completed and delivered by April of 2017, and we have requested  
19 that deadline to be postponed until December of 2017, so we  
20 actually can conduct data and assessment workshops.

21  
22 We are going to begin the process of putting together terms of  
23 reference for this assessment, which will come before this  
24 committee and the South Atlantic as well, and so there were a  
25 number of issues associated with this that hopefully Joe will  
26 have a chance to review.

27  
28 In terms of action items, what we have here in our scope of work  
29 is, rather than stating that the assessment is the best  
30 scientific information available, but is not adequate for  
31 management, the SSC could specify that it agrees the the stock  
32 status determinations, but that additional action and  
33 information are needed for the SSC to provide catch level  
34 recommendations.

35  
36 Now, just a reminder for those not familiar with the catch-free  
37 model, it's a very, very powerful, a very sophisticated model,  
38 in my opinion. It's very complex, but a very good data-poor  
39 method. In my opinion, it's much superior to a whole number of  
40 other data-poor methods that we apply, but I think this is part  
41 of the problem that we have been facing as well. I mean the  
42 model cannot produce certain types of outputs. For example, it  
43 doesn't provide MSY-based reference points, and it does not  
44 provide the basis for development of projections.

45  
46 Those are the limitations that we have in applying this  
47 methodology, and so it's something that I think we need to be  
48 more attentive to as far as looking at terms of reference for

1 these types of data-poor assessments. With that introduction,  
2 Joe, if you are ready.

3  
4 **GOLIATH GROUPEL BENCHMARK ASSESSMENT**  
5

6 **MR. JOE O'HOP:** Thank you for having me here at the SSC meeting  
7 in beautiful downtown Tampa. This presentation is about SEDAR  
8 47, the South Atlantic and Gulf of Mexico Goliath Grouper  
9 Assessment. It's a combined assessment for both the South  
10 Atlantic and for the Gulf of Mexico. The two analysts were  
11 Joseph Munyandorero, and he's done a lot of work with surplus  
12 production and yield per recruit models, and me.

13  
14 As Luiz mentioned, there have been several other benchmark  
15 assessments. SEDAR 3 was the first data workshop where goliath  
16 grouper data were evaluated. It wasn't an assessment at that  
17 point. SEDAR 6 began the first benchmark assessment of goliath  
18 grouper, and the catch-free model was used during that  
19 assessment and accepted by the review panel. SEDAR 23 was  
20 rejected by the review panel. Potentially, the biggest reason  
21 was that we could not meet the absolute benchmarks. The terms  
22 of reference were really MSY-based, and we could only provide  
23 relative benchmarks, but there were other reasons why the review  
24 panel rejected the work.

25  
26 We took a look at the recommendations coming out of the review  
27 panel from that assessment, and we went to work, again, on what  
28 we could do with goliath grouper to try to meet some of those  
29 objections that they had.

30  
31 In 2015, the commission asked for information and basically an  
32 update of the catch-free model, to take a look at goliath  
33 grouper. No action was taken on it at that point, and, finally,  
34 SEDAR 47, again, was another benchmark assessment, and we took a  
35 hard look at what data we had and then gave it our best shot at  
36 the review panel.

37  
38 You have to really take a look at which data or models have  
39 changed since we last looked at goliath grouper. Since SEDAR 23  
40 in 2010, what new data has been developed that we could possibly  
41 use for modeling? There have been underwater observations.  
42 There is length frequencies and there is some biological  
43 sampling. It's still in progress.

44  
45 There have been additional tagging studies. Hopefully that will  
46 lead to some additional information on total mortality and  
47 perhaps quantify both natural mortality as well as fishing  
48 mortality. There is some work that has been completed and some

1 work that is ongoing. There is some work on the identification  
2 of nursery habitats by elemental concentrations. It's certainly  
3 important work, and it may help identify where some of the  
4 origins of the specimens out in the water came from.

5  
6 There is some work that's ongoing on how do we age fish non-  
7 lethally. How do we get ages for fish which we would rather not  
8 kill? That's going on, and there is also some reproductive  
9 sampling that is taking place. Hopefully some of that will be  
10 available with a MARFIN report later this year, and that may  
11 lead to some additional work on the tagging information that's  
12 been collected already.

13  
14 There has been some piggybacking with the finray samples with  
15 genetics, and so Mike Tringali at FWRI has been looked at the  
16 relatedness of individuals, where we have samples, and,  
17 recently, those finray samples have got to the lab, and  
18 basically what he's finding is that the animals -- Goliath  
19 grouper that are on the Southeast coast and the Florida Keys  
20 tend to have more siblings in common than the ones off the West  
21 Florida Shelf. It's an interesting look at stock structure, or  
22 sub-stock structure, since we think they're all one stock, but  
23 the relatedness gives us an idea of how many parents are  
24 breeding in those areas, and it's just -- We're just trying to  
25 come up with some way to analyze that information and make it  
26 useful for management purposes.

27  
28 We have tried to look at other modeling approaches. We have  
29 been able to take a look at stock reduction analysis again. We  
30 tried that in SEDAR 23, but we weren't having satisfactory  
31 results from it. We thought we might have better results in  
32 SEDAR 47, and, with some modifications of a stochastic stock  
33 reduction analysis model, we thought we were getting a little  
34 better results, but we're still not satisfied with it, and  
35 that's what we will see today.

36  
37 For SEDAR 23 and the data that have come up in later research,  
38 after 2010, it still seems that the release mortality appears to  
39 be low, something less than 5 percent, and so we're using 5  
40 percent as just a placeholder for what true release mortality  
41 is, but we think it's low. 5 percent seems to be a nominal  
42 figure.

43  
44 There is some information on reproductive strategy that's being  
45 developed with the MARFIN grants. Right now, we're assuming  
46 goliath grouper are gonochoristic. There are some indications  
47 that they could be protogynous. Some of the sampling, if it  
48 bears out and goes through peer review, there might be some

1 suggestion of protogyny. Right now, there are some  
2 observations, but they still need to be vetted.  
3  
4 Spawning appears to be August through November. There are  
5 chorusing activities, if you look at the hydroacoustics. They  
6 really start booming in July, and so that could indicate that  
7 there are spawning activities from July through November.  
8  
9 From the Bullock et al. study back in 1992, female maturity has  
10 -- That's all the information we have, and so it seems that they  
11 mature at about those sizes and at about ages six to seven.  
12 Males mature at a little bit smaller size and a little younger  
13 age.  
14  
15 Fecundity, we have very little information about fecundity in  
16 goliath grouper. There have been two samples that I know of  
17 that have been worked up, but that is hardly enough to really be  
18 confident about what fecundity is. Sex ratio, from the Bullock  
19 et al. study and also from Chris Koenig's work on the Southeast  
20 Florida coast, it appears to be one-to-one at any size or age.  
21  
22 If there is protogyny involved, that could mean that we need to  
23 adjust that sex ratio as the animals get older, but, right now,  
24 we're just assuming they're gonochoristic and the sex ratio is  
25 one-to-one. The studies that were available for SEDAR 23 and  
26 later still indicate that mangrove habitats are the primary  
27 places for juveniles to settle, and adults and sub-adults appear  
28 to move offshore to high-relief habitats, and so artificial  
29 reefs and wrecks tend to attract a lot more individuals than  
30 natural habitats.  
31  
32 Now for the review workshop. It was held May 17 to 19 of this  
33 year. We had several CIE reviewers and SSC representatives.  
34 Joseph and myself were the analysts and presented the  
35 information that we had.  
36  
37 Basically, the review panel's comments were that we didn't  
38 provide enough details, and that hampered their ability to look  
39 at the data that we presented for characterizing catches,  
40 vulnerabilities, and indices. There were some comments that we  
41 needlessly restricted the recreational catch per trip indices to  
42 a short time interval and that we didn't explain the MRFSS and  
43 MRIP time series adjustments, and that's because we didn't make  
44 any. The amount of recreational data is very sparse, and we  
45 didn't feel that the adjustments were warranted. However, we  
46 didn't adequately explain that to the panel.  
47  
48 We have a commercial time series of landings from basically back

1 from 1918 going forward, with some gaps. The data are more  
2 complete from 1950 going forward. We had some information from  
3 the Gulf Council that there may have been overreporting by one  
4 dealer in southwest Florida. The reasons are a little obscure,  
5 and the dealer is dead now, and so it's a little hard to ask him  
6 if he had any reasons for this, but we ended up trying to adjust  
7 for that particular dealer that accounted for a large proportion  
8 of goliath grouper landings on the southwest Florida coast.

9  
10 The other criticism about the commercial fleets was that we  
11 weren't able to estimate discards from this fishery. There is  
12 information from observers and from logbooks that there are  
13 discards of goliath grouper. However, there are not many  
14 observations, and no estimates of commercial discards were made  
15 for the longline fleet, and so that kind of hampered our ability  
16 to come up with an amount of discards of goliath grouper, and so  
17 we didn't have that information. Basically, we are not able to  
18 characterize the total catch very well for both the commercial  
19 and the recreational fleet.

20  
21 We also used an abundance index from underwater observations  
22 from the Reef Environmental Foundation. That particular survey  
23 is completed by divers who volunteer their time and volunteer  
24 the effort in making those reports from wherever they dive.  
25 There is no experimental design. They just go out and dive and  
26 then fill in a report. These divers have been trained in the  
27 methodology, and so they hopefully conform to their training and  
28 give us a fair count of fish at the sites that they visit.

29  
30 The Reef data are ranked abundance values and not actual  
31 abundance, and so the number of fish is either zero, one fish,  
32 two to ten, eleven to 100, and 100 plus. Those are the  
33 categories in the Reef dataset, and so they're abundance ranks.  
34 As in SEDAR 6, we analyzed those data with the same statistical  
35 design that was done in SEDAR 6, and both SEDAR 23 and SEDAR 47,  
36 and the reviewers thought that we did not treat the ranks  
37 appropriately, and they wanted us to develop a different method  
38 for analyzing the ranked data.

39  
40 They also noted that there was some conflict between the Reef  
41 information, which, again, is abundance ranked, and the  
42 MRFSS/MRIP offshore index that we developed. They are slightly  
43 different, as you will see in a few minutes, if you feel like  
44 going into the guts of the assessment, but there may be some  
45 reasons for those particular indices not to agree, but we don't  
46 have the information that would allow us to separate out the  
47 size or age structure for both of those indexes.

48



1 There were insufficient diagnostics for the indexes presented in  
2 the assessment report. That was certainly true. I presented  
3 what I thought was a reasonable presentation for the index. I  
4 did leave out the diagnostics, and that is my oversight.

5  
6 They also felt that we had an insufficient suite of  
7 sensitivities to examine both the assumptions we made about the  
8 model and for the behaviors of both models, and they thought  
9 that neither model used evaluated episodic mortality properly,  
10 and so that's basically a lot. There was a lot not to like in  
11 our assessment, apparently.

12  
13 We made modifications to the Stochastic Stock Reduction Model,  
14 and this is the model put out by Steve Martell and Dr. Froese.  
15 What they had in the model was fine, except that it can only  
16 handle a single index, and it didn't handle recruitment  
17 deviations, and so we put recruitment deviations in the code for  
18 it, and we also had multiple indexes available for the model to  
19 use. Since this was a modification of a code and it was not  
20 reviewed, the review panel thought that it should be reviewed.

21  
22 We had some uncertainty, actually a lot of uncertainty, in both  
23 the catch-free and SSRA model sensitivities, and so they didn't  
24 have a lot of confidence in the model results, and we had some  
25 lack of convergence in a few of the MCMC chains using the catch-  
26 free model, and so it made it even more unreliable, in their  
27 view.

28  
29 Another interesting view brought up during the review panel  
30 deliberations was that we didn't take into account the  
31 covariance between highly correlated variables, like the growth  
32 parameters of L infinity and K. You probably know that they are  
33 highly negatively correlated, and the MCMC procedures do not  
34 take that type of covariance into account when it's trying to  
35 take its sampling out of the clusters of that distribution.  
36 That was another --

37  
38 This will be the last slide for the review panel comments. We  
39 didn't hold the usual data assessment workshops for benchmark  
40 assessments. They thought that it would be wise to document  
41 decisions about the data used for inputs and it would help the  
42 review panel basically better review the information presented  
43 at the review workshop.

44  
45 They had some suggestions to use simpler models, rather than the  
46 age-structured models we were using in SEDAR 47. They thought  
47 that, and I brought this up during the review panel meeting,  
48 that one aspect we're not capturing in the assessment is how the

1 distribution of goliath grouper have changed over time, and are  
2 they reoccupying sites that they historically have occupied?

3  
4 Of course, we don't know what they have historically occupied,  
5 but it would be nice to know if they're showing up on more and  
6 more reefs. We get some idea of that from the Reef data, but  
7 there are lots of holes, and so maybe some more structured  
8 occupancy modeling might help in looking at the distributions  
9 and that aspect of recovery in goliath grouper.

10  
11 They also thought that the Reef index for some structured  
12 sampling might help improve the Reef index, and so, instead of  
13 using rank abundance, if we could get Reef to actually give us  
14 counts of goliath grouper, which they're not doing at the  
15 moment, and they don't collect that information, but, if we had  
16 more count data, we might be able to better assess the changes  
17 in abundance of goliath grouper.

18  
19 There is also some comments about the Great Goliath Grouper  
20 Counts. This is a survey that's done in June of each year, and  
21 it started in about 2010 and has gone forward from there, but  
22 divers volunteer their time to dive in certain locations.  
23 Again, it's not structured. It's whatever they choose to dive  
24 on, but they provide us with actual counts of goliath grouper.

25  
26 One thing I noticed with Reef is that I wasn't getting  
27 information from the West Florida Shelf in the same quantity  
28 that I did before, and so the Great Goliath Grouper Counts  
29 allowed me to extend the time series for the Reef dataset, where  
30 these samples overlapped, but the review panel was concerned  
31 that this might end up biasing the counts, or actually the rank  
32 abundance, that were in the Reef index, and so we probably need  
33 to do some more work and take a look at the sensitivity of that  
34 particular collection of data and how that interplays with the  
35 reef index.

36  
37 Anyway, that concludes my presentation on the review panel  
38 report. Hopefully I have done a fair job at presenting their  
39 concerns. I have additional information on the assessment, if  
40 you want to take a look at that, and so I am at the will of the  
41 committee.

42  
43 **CHAIRMAN BARBIERI:** Thank you for that summary, Joe. Before we  
44 open up for general committee discussion, I want to open it up  
45 to any additional comments that SSC members who have  
46 participated in the review panel would think about making at  
47 this time. Mary, I imagine you are on the phone or through  
48 webinar?

1  
2 **DR. CHRISTMAN:** I am. Did you want me to add something?  
3  
4 **CHAIRMAN BARBIERI:** Just to know if there is anything else. Joe  
5 just presented a very thorough summary.  
6  
7 **DR. CHRISTMAN:** Yes, he did. He captured most of the points.  
8 There were some additional points that, if you're interested,  
9 start on page 161 of the stock assessment report, to get some  
10 more details, but he did cover the big points.  
11  
12 **CHAIRMAN BARBIERI:** Thank you, Mary. Bob, anything to add?  
13  
14 **DR. ELLIS:** I don't think so. That was pretty comprehensive.  
15 There is some details, if anybody has questions about some of  
16 these points, that we can discuss further, but nothing pops out  
17 at me as missing at this point.  
18  
19 **CHAIRMAN BARBIERI:** Okay. Thank you for that. Any questions  
20 from the committee regarding this assessment? Joe.  
21  
22 **DR. J. POWERS:** I am curious about the episodic mortality  
23 question that they had, and these were cold kills. Are there  
24 data about this, the cold kills?  
25  
26 **MR. O'HOP:** Yes, there are data, but, again, they are a little  
27 indirect. We have collections of carcasses that occurred during  
28 the cold kill. We have observations where people went out and  
29 photographed dead goliath grouper in the Everglades and in  
30 various places in southwest Florida, and so we have that kind of  
31 indirect information. We don't have a total count on the number  
32 of bodies. I don't think -- Even if you had a count, you  
33 wouldn't know the more cryptic mortality that might have  
34 occurred and scavenging and things like that.  
35  
36 We also have indications from the indexes, the catch indexes,  
37 where the catch rates fell off quite precipitously after the  
38 cold kills in January of 2010, and so, yes, we have that. They  
39 are in the indexes for the recreational catches, both for the  
40 Everglades National Park and the general recreational MRFSS/MRIP  
41 survey.  
42  
43 **CHAIRMAN BARBIERI:** Bob.  
44  
45 **DR. ELLIS:** Just to clarify on that a little bit more, the cold  
46 kill in question that occurred primarily affects the inshore,  
47 which are going to be the younger individuals, and it's pretty  
48 clear, from sort of the two juvenile indices, that 2010 was a

1 really bad year that corresponded with that cold kill, but a lot  
2 of discussion during the review panel regarded how was that  
3 modeled following that, when you have an episodic mortality  
4 event happening on a segment of the population, but not  
5 necessarily carrying over, and there was a lot of uncertainty  
6 about how that cold kill -- What would the expectation be  
7 following that and when would you see it in the adult population  
8 and when would that occur and things like that that were  
9 difficult to reconcile just by looking at the indices.

10  
11 **CHAIRMAN BARBIERI:** Thank you for that, Bob. Any other comments  
12 or questions for Joe regarding the goliath grouper assessment?  
13 Joe thought ahead and actually has a number of back-pocket  
14 slides that he is ready to show if there are some specific  
15 questions about issues that the committee would like to hear  
16 more about. Bob.

17  
18 **DR. ELLIS:** Just to follow up on the cold kill, this is exactly  
19 what I was hoping that Joe would show, is that 2010 point, where  
20 that top graph, I believe, shows the two indices that are going  
21 to capture juvenile abundance, and you can see that the cold  
22 kill occurred in 2010.

23  
24 There was a bit of discussion as well regarding the steep  
25 increase, from about 2002/2003 up to the years immediately  
26 preceding that, and whether or not that was reflective of some  
27 changes in fisher behavior or really reflective of changes in  
28 abundance, and that sort of thing was also a source of  
29 uncertainty that wasn't addressed, and we're not even sure if it  
30 could be, really.

31  
32 **CHAIRMAN BARBIERI:** Yes, Jim.

33  
34 **DR. TOLAN:** Thank you, Mr. Chairman. As this relates to the  
35 episodic events, we ran into the very same thing, and I'm sure  
36 you guys are very familiar with the red grouper and the red  
37 tide. I see in the assessment report that red tide was also  
38 mentioned as being a source of mortality. We came up with the  
39 idea of modeling that as a separate removal of the fleet, and,  
40 while it's doable, from an assessment perspective, I have never  
41 quite got over the hump of how do you program in that frequency  
42 of these episodic events that makes a reasonable overall  
43 assessment.

44  
45 If you look at a lot of these indices that go through time, you  
46 would expect to see them, if they are true episodic events, and  
47 you simply, most of the time, don't see that, and so it's that  
48 frequency issue that I have always sort of wrapped my head

1 around. Yes, it's probably something that is significant, but,  
2 if it's going to be an episodic event, how do you get that  
3 frequency right?

4

5 **CHAIRMAN BARBIERI:** That's a good point. Joe.

6

7 **MR. O'HOP:** Regarding episodic events, of course, they vary in  
8 their aerial extent and their severity, but I think modeling  
9 from the event as a removal is probably a better approach,  
10 rather than trying to ramp up natural mortality for a particular  
11 set of years or seasons or however you are going to do it.

12

13 The problem is scaling the actual level of removals from an  
14 episodic event. The problem we saw with trying to account for  
15 these mortality events is how do you come up with the level of  
16 removals? If you include it just as an increase in natural  
17 mortality, how do you prevent the model from just dumping in  
18 more recruits to sort of balance its view of the productivity of  
19 the stock? Once you have an event like that, if you try to just  
20 let natural mortality scale up with the event, the model tends  
21 to change its view of the overall productivity of the stock.

22

23 **CHAIRMAN BARBIERI:** Any other questions for Joe? Seeing none, I  
24 think we are kind of ready to move on, if there is an action  
25 item associated with this. This assessment was not accepted by  
26 the review panel, by the SEDAR review panel. The assessment  
27 report does present a stock status determination, but it wasn't  
28 accepted by the CIE review panel, or not just the CIE, but  
29 SEDAR, including the SSC members. Yes, Ben.

30

31 **DR. BLOUNT:** Mr. Chairman, looking through the notes on this,  
32 the SEDAR 23 review wasn't accepted either, and Slide 8 that Joe  
33 presented showed that the usual data and assessment workshops  
34 weren't held. I'm wondering if that was the same for SEDAR 23.  
35 Is there just a problem, a core problem, with the quantity and  
36 continuity of data that prevent us from being able to do  
37 anything beyond what's done?

38

39 **CHAIRMAN BARBIERI:** Joe, do you want to weigh in?

40

41 **MR. O'HOP:** Sure. Well, part of the problem is we don't really  
42 know what fishermen are catching. We don't know what sizes or  
43 what ages are present. We can make a stab at them from some of  
44 the offshore observations, so we get an idea of the size  
45 structure. I think I have a slide or two that I can show on how  
46 we tried to address selectivities.

47

48 What we have, basically, is some studies that gives us some idea

1 of the size structure. We can apply something called a  
2 stochastic aging to give us a best guess on what the age  
3 structure might be for those size individuals, and so we  
4 approached, in SEDAR 23, the aging of these individuals by using  
5 stochastic aging.

6  
7 It takes a look at the growth curve and what its variation of  
8 length at age is and then applies that as an age/length key to  
9 the sizes you throw at it. For the estuarine areas, and those  
10 are the two top figures there, that's what we would figure as  
11 the age structure of individuals in the estuaries. All this is  
12 using is the growth curve and the observed sizes from the  
13 Brusher and Schull study that was conducted in the Everglades  
14 National Park to look at young individuals of goliath grouper.  
15 The second panel is from the Everglades National Park angler  
16 survey, and those are the sizes of individuals that came up in  
17 their angler survey, mostly during 1974 to 1977, but there is a  
18 smattering of individuals through 1990, but, basically, they  
19 tend to be ages two to three.

20  
21 Now, for the offshore population, we have some underwater  
22 observations from Angela Collins's work and from Chris Koenig's  
23 work, and so we can also apply the same stochastic aging to  
24 that. However, stochastic aging tends to smear out those ages  
25 at length, and so you get an idea of what the population may be,  
26 as far as age structure, but it's much better to have actual  
27 ages than to try and come up with an age structure this way, and  
28 so, for SEDAR 47, I instead used the ages from the Koenig et al.  
29 study and from Brusher and Schull and combined both of those  
30 individuals collected during that study that had ages.

31  
32 Now, these are ages from spines and a few otoliths, and so the  
33 spine ages are a little bit iffy. Sometimes the individuals,  
34 you may not get a good read of age off of them, but, basically,  
35 they're not bad, and they tend to be fairly usable. Basically,  
36 goliath grouper, when they're young, they recruit into the  
37 estuaries and the mangrove areas. They stay there for four or 5  
38 years and, by age six, most of them have moved offshore already,  
39 and so the ages fit with what we know about their life history.

40  
41 They fit with the stochastic aging, and so I think that the  
42 direct aging is probably pretty good for the Everglades National  
43 Park index and, by extension, the MRFSS/MRIP estuarine index  
44 that we generated for this SEDAR.

45  
46 For the offshore, we didn't really have too many direct ages to  
47 work with. There was twenty-two specimens that were aged by  
48 using finrays out of Chris Koenig's 2013 MARFIN report, and so I

1 took that plot out of his MARFIN report and generated the  
2 histogram on the right, and that shows what that ages were for  
3 those particular specimens, and it's showing that you can make a  
4 lot out of a little. I generated this logistic fit to it, and I  
5 think it's somewhere around age ten is where the  $a_{50}$  is for that  
6 particular relationship, and so that's what we're using for both  
7 the Reef and the MRFSS/MRIP offshore index as our view on what  
8 the age structure may be for the offshore populations.

9  
10 The estuarine index and the age-structured, we're fairly  
11 confident about. The offshore, we're not so confident about,  
12 but it's not unreasonable at this point. If you were to look at  
13 the stochastic aging, it's coming out to about an  $a_{50}$  of about  
14 sixteen to seventeen years. For the direct aging that we have  
15 here on these admittedly small number of specimens, it's around  
16 ten.

17  
18 This is an important point, because, when you are using SSRA, or  
19 the stochastic stock reduction we used for SEDAR 47, you're  
20 treating the catches as known without error. You're treating  
21 the selectivities also as known without error, and you have the  
22 indexes, which are supposed to index abundance, and so you've  
23 got those things interacting within your models. If those are  
24 off, then your reference points are going to be off.

25  
26 **CHAIRMAN BARBIERI:** Thank you for that, Joe. Did that help?

27  
28 **DR. BLOUNT:** Yes, thank you.

29  
30 **DR. J. POWERS:** I've been around a while, and so it seems like  
31 this gets revisited periodically, and there isn't much change.  
32 Well, obviously there's change in the stock and things like  
33 that, and there is some marginal increases in data and stuff,  
34 but, to me, the motivation for interest in this is basically  
35 there is a moratorium right now, and is there enough information  
36 to suggest that there shouldn't be a moratorium, and I guess, to  
37 me, any future analysis should be sort of couched in that way,  
38 is what would it take to make that decision, rather than --  
39 These sorts of things, they're getting better and better, but,  
40 if you don't know the catches, you don't know the catches, and  
41 so I think I would probably, if this is going to get revisited,  
42 really try to rethink about what sort of information we're  
43 really trying to supply to them.

44  
45 **CHAIRMAN BARBIERI:** Very good point, Joe. Jim.

46  
47 **DR. TOLAN:** Thank you, Mr. Chairman. That really kind of leads  
48 me to the point I was hopefully going to wrap this up with.

1 Given that this stock has been rejected three different times  
2 for different assessments, using these same sorts of models,  
3 they really don't change a whole lot. In my review of the  
4 report, there is a whole long laundry list of research  
5 recommendations.

6  
7 Given that data, do you think we're ever going to get to that  
8 point where you could make a recommendation on the stock, even  
9 with this new information, if we're still operating under the  
10 catch-free model?

11  
12 **CHAIRMAN BARBIERI:** That's a good question, Jim.

13  
14 **MR. ATRAN:** Admittedly, a lot of what he presented was over my  
15 head, but it sounded like a lot of the criticisms of the review  
16 panel were due to certain analysis where you didn't explain the  
17 analysis properly. Are their criticisms fatal, or are you going  
18 to come back and fix the assessment to address their concerns?  
19 Is this DOA, or is it salvageable?

20  
21 **MR. O'HOP:** Certainly stocks that are data-limited have been  
22 assessed, but it's just the level of assessment that you want  
23 and that's reasonable.

24  
25 **CHAIRMAN BARBIERI:** I suggest we take a break, and we will come  
26 back and see if we can get this resolved.

27  
28 (Whereupon, a brief recess was taken.)

29  
30 **CHAIRMAN BARBIERI:** We need to have a discussion about how we're  
31 going to proceed, in terms of the determination by the SEDAR  
32 review committee, whether we accept that determination, and that  
33 would then basically set up the next step, in terms of catch  
34 level recommendations, if any. I think it would be helpful for  
35 the committee to weigh in, explicitly, about this issue. I am  
36 sure that the council will want to know how we felt about the  
37 review panel comments and recommendations and whether we concur  
38 with those recommendations or whether we have something  
39 different to say. With that, I am going to open the floor for  
40 general comments. Sean.

41  
42 **DR. S. POWERS:** Joe, the general conclusion that overfishing  
43 wasn't occurring in the stock and is no longer overfished seemed  
44 very sensitive to the natural mortality. Was that stock  
45 condition persistent under all natural mortality sensitivities  
46 or --

47  
48 **MR. O'HOP:** I only offered two levels of natural mortality, the



1 level that we had in SEDAR 23, which was the old Hoenig model,  
2 and the 0.12, and 0.179, if you want to point a fine point on  
3 it, for the -- It's actually called the Hoenig NLS, the  
4 nonlinear least squared estimator.

5  
6 We had added two levels in, and at the higher levels of natural  
7 mortality, it offered -- It looked like there was more of a  
8 buffer. If you look at the F current and the SSB current  
9 projections, they were much higher. The problem with the catch-  
10 free model, which had those two sensitivity runs, is that it  
11 plows all the -- It can't really estimate F in the post-  
12 moratorium years.

13  
14 It gives you an average level of mortality that is occurring,  
15 and, because that's affected by the episodic mortality, the  
16 average level it calculates is actually above the F ratio that  
17 you would have as your benchmark, and that would be the F at 50  
18 percent SPR, and so it's actually saying that that average level  
19 of mortality is too high, but it's for that whole period. Let  
20 me pull up that phase plot for you.

21  
22 The horizontal line in the upper-left phase plot, that's the F  
23 ratio of one. That's your F current divided by the management  
24 target, which is 50 percent SPR, and so the red dot is the  
25 model's optimum solution, and you can see it's above the line.  
26 Basically, it's saying, with this closed fishery, the level of  
27 average mortality is above that limit line, and so it's actually  
28 telling you that you couldn't support any fishing.

29  
30 The plot below it is the level of F. The red line is the level  
31 of F that the model is calculating, and you can see it's a flat  
32 line from 1990 forward, and that's the average level of fishing  
33 mortality that this model is calculating for that period. It is  
34 not what is actually occurring in a particular year, but it's  
35 just, over that time period where the fishing level has been  
36 closed, that's what the average F is.

37  
38 It doesn't give you a good idea of what the overfishing ratio is  
39 or it doesn't give you an idea of what the benchmark is for  
40 overfishing. That's what we were hoping that we could provide  
41 with the stochastic stock reduction analysis, is some better  
42 discrimination of that behavior and fishing mortality that would  
43 be due to release mortality, and it does give us some idea of  
44 what's going on there, but it has some other structural problems  
45 with fixed parameters for selectivities and growth and natural  
46 mortality. It doesn't fit the indices very well, but it does  
47 give us a lower level of what it calculates as a fishing  
48 mortality in those out years.

1  
2 **CHAIRMAN BARBIERI:** Yes, Will.

3  
4 **DR. PATTERSON:** In looking at these plots, the thing that is  
5 confusing to me, and I understand all the caveats with the  
6 methodology that people have raised and the review of it, but if  
7 you started out in a situation where you basically had collapse  
8 and you look at these estimates of F at 50 percent SPR across  
9 time, which are above the threshold, then how do you get  
10 recovery ever?

11  
12 **CHAIRMAN BARBIERI:** Right, and this is one of the points that at  
13 least one of the reviewers made, that this overfishing status is  
14 creating some issues here that are hard to ignore. Marcus.

15  
16 **DR. DRYMON:** Thank you. I apologize if this has been covered  
17 already, but if this is truly a data-poor stock, was there  
18 consideration for looking at it in the sense of the other  
19 species, like with SEDAR 49, the other data-poor species?

20  
21 **CHAIRMAN BARBIERI:** No, and do you mean looking into the -- Joe,  
22 I don't mean to jump in there, but, in this case, because there  
23 are no landings, everything is based on discards and some of the  
24 other information, but there are no fisheries landings. I don't  
25 believe there is any of those methodologies in the data-limited  
26 methods, the package that's being used for the SEDAR 49, that  
27 would apply to this one. This is one of the things that makes  
28 this species so tough, is really not having any landings  
29 information that we can use to help scale the stock abundance.

30  
31 Here we are, basically with a situation where we have a rejected  
32 assessment, and I am not feeling from the committee, and I don't  
33 mean to put words in your mouth, but I am not feeling, from the  
34 committee, any sense of confidence or any indication that you  
35 disagree with the recommendation of the review committee. Jeff.

36  
37 **DR. ISELY:** I don't disagree with the recommendation, but I want  
38 to get back to Will's point. How are we ever going to recover  
39 this stock, given the current assumptions? Unless those  
40 assumptions change or we get more information, we're not going  
41 to be able to do anything about it in the future, and so this is  
42 as good as it gets, and what data do we need and what methods or  
43 information is it going to take to assess this stock, and I  
44 think that's what we need to focus on and give some  
45 recommendations.

46  
47 **CHAIRMAN BARBIERI:** That's a good point, but, having been  
48 involved in the two other previous ones, there are fairly

1 detailed recommendations that came out of the previous review  
2 panels that talk about this situation.

3  
4 There are some concerns about the model that I think are not  
5 warranted, given the fact that we recognize this as being a  
6 data-poor or a data-moderate type of assessment method, but, to  
7 some extent, I feel that, because these assessments have been  
8 all conducted with quantitative assessment models, the bar is  
9 being raised to the level of model outputs and the quantity of  
10 data and the availability of data that we would expect for those  
11 more better-informed models, and this is not the case here, and  
12 so this is not going to be a realistic expectation.

13  
14 I was talking to Carrie Simmons during the break, and we were  
15 talking about there have been some additional data coming in,  
16 but nothing really that significant that would make a big impact  
17 and change our perspective on how to move forward, and so I  
18 think we have some recommendations, Jeff, I think, on where to  
19 go, but it's just it will be expensive. It will take quite a  
20 bit of resources, and this hasn't really risen to the point that  
21 folks would invest into getting those data sources.

22  
23 The issue about, for example, abundance versus density and how  
24 much are we getting true metrics of abundance for these indices  
25 over time, I remember, and this was SEDAR 3, when the assessment  
26 was aborted. Shannon was just coming out of grad school,  
27 remember, at that point, if I remember correctly.

28  
29 This was discussed extensively then, and we can't really  
30 separate this, and then the issues of the indices -- Shannon  
31 actually did the indices standardizations for the previous one,  
32 and, still, the review panel had a whole bunch of critical  
33 comments, because they felt that the surveys that exist now are  
34 too specific to specific areas and they can't really be  
35 extrapolated to represent true stock abundance, and we knew this  
36 ten years ago, but really not -- It would probably have -- We  
37 would have to have something like a dedicated survey, a  
38 dedicated index, to be developed, and it's more expensive than  
39 folks, and we were talking about this, than folks are willing to  
40 invest at this point. Shannon.

41  
42 **DR. CALAY:** You are about to see, in the next few SSC meetings,  
43 the results of our SEDAR 49 data-limited methods, and some of  
44 you have been involved in those assessment workshops, and this  
45 is a candidate for those data-limited approaches. That doesn't  
46 make it easy, necessarily, to develop management advice, and so  
47 we will be conversing with you about how data-limited methods,  
48 the results of those methods, could actually fit in our

1 management framework. That's an open question still.

2  
3 I just wanted to speak out, because the goliath grouper  
4 assessment previous was the poster child for why we changed our  
5 terms of reference entirely for data-limited methods, because we  
6 got rejected last time with a data-rich terms of reference for a  
7 data-limited assessment. Did you actually use a data-limited  
8 terms of reference for this and it was still too high of a bar  
9 for the review panel?

10  
11 **CHAIRMAN BARBIERI:** I wasn't there, and so I will defer to Bob  
12 and Joe to weigh in that, and Mary, if she's still on the phone.

13  
14 **DR. CHRISTMAN:** I don't remember the terms of reference, off the  
15 top of my head, but one of the recommendations from the review  
16 panel was that other methodologies be applied, because there are  
17 so many assumptions in here that there's no way to assess the  
18 effect of the assumptions without just making numbers up. We  
19 did in fact recommend that data-limited be looked at, but I  
20 don't remember the answer to your question about whether the  
21 TORs were based on data-limited. Sorry.

22  
23 **DR. CALAY:** I think you will all be aware, if you're not  
24 already, but one major advantage of the DLM tool that we're  
25 trying to use at the Southeast Center is integrated management  
26 strategy evaluation, which kind of lets you examine some of your  
27 scientific uncertainty, and so it's an excellent tool. It's  
28 still not easy to use in a management context, and so we will  
29 see more on that in the next few SSC meetings.

30  
31 **CHAIRMAN BARBIERI:** I guess that was your point, Marcus, and so  
32 I was wrong there, and I assume that the DLM methodologies would  
33 not be able to handle something like goliath, but it might not.

34  
35 **DR. CALAY:** It can't do the catch-free model, at the moment.  
36 It's not coded, but it does about sixty other approaches.

37  
38 **CHAIRMAN BARBIERI:** So there is some hope. Yes, Ben.

39  
40 **DR. BLOUNT:** A question that keeps circling in my head, and I am  
41 not quite sure how relevant it might be, but, given the history  
42 and the data-poor condition of this species, why was it put up  
43 to be reviewed again for SEDAR 47? There must have been some  
44 rationale for giving it priority, given the really crowded  
45 docket that we have for the SEDAR. What was considered  
46 important enough about it for it to get that kind of attention  
47 and review? I am just curious.

48

1 **CHAIRMAN BARBIERI:** Right, and Joe was asking the same question  
2 during the break, and it's really a lot of interest,  
3 particularly in South Florida, in regards to the current status.  
4 Abundance there seems to have increased substantially, and there  
5 are interactions with anglers that we hear repeatedly at the FWC  
6 Commission meetings, and there are concerns from the Florida  
7 Keys about the potential impact of goliath population increases  
8 on, for example, spiny lobster, which is known to be a common  
9 prey item for goliath.

10  
11 None of these issues have been really substantiated extensively.  
12 It's basically concerns that stakeholders have, but this  
13 generated our commission's interest in pursuing this, and our  
14 decision was, since this a federally-managed species for which  
15 this committee weighs on, we thought that we would just put it  
16 through this process and address both any issues the councils  
17 might have as well as our commission. Carrie.

18  
19 **DR. SIMMONS:** Thank you, Mr. Chairman. I was just going to add  
20 to that a little bit. After the last assessment, SEDAR 23 in  
21 2010, the councils were asked to put together like a joint  
22 steering committee, and we had various experts that each council  
23 put together, and we got together and talked about it. We had  
24 individuals from FWC on there, and I think we had a Science  
25 Center representative. I think Clay was involved in that, and  
26 we went through that list of research needs, and we said what  
27 can we get and what can we not get, and we came up with a whole  
28 list of things.

29  
30 We had gotten some new information, and, was it enough? We  
31 didn't know. We had this new information, and that was the  
32 genetics information that was done by Tringali. There was  
33 movement, there was evidence of the spawning aggregation stuff,  
34 and there was some non-lethal work that had been done for gonads  
35 and aging and stuff like that, but it wasn't put into an  
36 assessment.

37  
38 After all that, the group got together and they voted. They  
39 said, we have this information and we think we're ready for the  
40 councils to request moving forward with an assessment. After  
41 that, the councils requested an assessment, and I think it was  
42 like back in 2013 or something like that. Each council wrote a  
43 letter and said this new information is available, this was the  
44 previous research requests, and we would like to see if we can  
45 get any further with an assessment. We made that request, and  
46 so here we are now, reviewing the assessment.

47  
48 **CHAIRMAN BARBIERI:** Folks, we're going to have to move forward.

1 I hate to crack the whip here, but I have to. I need a motion  
2 from the committee that would provide the council with some idea  
3 of the committee's main feeling about or reaction to the review  
4 report and whether there is concurrence with the review report  
5 or whether we disagree with it, and I am saying this because  
6 there is a reason why this committee -- Think about National  
7 Standard Guideline 2. There is a reason why the SSCs always  
8 review and either recommend something as best available science  
9 or not.

10  
11 All the assessments that are reviewed, through whatever the  
12 regional assessment process is, they have to come before the  
13 SSC, and I think it would be informative for the council to have  
14 our official word on how we feel about this assessment and the  
15 review it undertook.

16  
17 **DR. J. POWERS:** Luiz, can I ask a quick question?

18  
19 **CHAIRMAN BARBIERI:** Sure can.

20  
21 **DR. J. POWERS:** There is discussion about this being a data-poor  
22 species and that there might be some methods there that would be  
23 more useful. I am not sure -- I didn't get enough from that  
24 discussion to feel confident about that. Is this just something  
25 that's sort of being thought about or would it be worth making a  
26 suggestion or a motion to that effect? I guess that's really  
27 what I'm asking.

28  
29 **CHAIRMAN BARBIERI:** I see Shannon raising her hand there, and so  
30 I'm going to let her address that.

31  
32 **DR. CALAY:** I think the trick for this assessment of goliath is  
33 that there are no reported landings after the moratorium, and so  
34 the trick of it that those data-limited methods typically do  
35 require some landings history, and so what you would have to  
36 have is some estimate that you felt was reliable enough of the  
37 essentially dead discards and other illegal mortality.

38  
39 I know that the catch-free model does provide some estimation of  
40 what is essentially an unintentional death, mortality, number,  
41 and that could be explored through sensitivity runs, but, if the  
42 group does not feel that it would be productive to try to  
43 develop essentially a poaching F or a dead discards F, then we  
44 couldn't really proceed even with the data-limited methods  
45 toolkit.

46  
47 **CHAIRMAN BARBIERI:** Thank you, Shannon. Kai.

48

1 **DR. LORENZEN:** It seems to me that it's really very different  
2 from the stocks that we normally put in the data-poor category,  
3 because it's data poor only in the sense that we don't have  
4 landings, but we have fairly detailed observations otherwise,  
5 and quite a good understanding of the peculiarities of that  
6 stock, and we have other sources of information, like the  
7 goliath grouper counts and so on and so forth, and so it seems  
8 to me that it really requires something that is maybe a bit  
9 different from our other data-rich assessments, but it shouldn't  
10 be put in the data-poor category.

11  
12 **CHAIRMAN BARBIERI:** Jen.

13  
14 **DR. HERBIG:** Thanks. I was just going to say, isn't this pretty  
15 similar to the red drum population, the stock assessment that we  
16 did with them for SEDAR 49, and so it potentially would be  
17 possible.

18  
19 **DR. CALAY:** It's always possible if you think you can develop  
20 some estimates of the dead animals, and we have some things that  
21 we can look at to develop an estimate, and that tool does  
22 provide you with a way of looking at scientific uncertainty in  
23 an integrated fashion, through an MSE simulation context, and so  
24 it all comes down to how much reliability you think there is in  
25 these estimates of dead animals after the moratorium.

26  
27 **CHAIRMAN BARBIERI:** I have Sean and then Jim.

28  
29 **MR. S. POWERS:** I was going to take a crack at a motion.

30  
31 **CHAIRMAN BARBIERI:** Then hold that thought, please. Jim and  
32 then Sean.

33  
34 **DR. TOLAN:** This might be a good sort of final -- Having served  
35 on SEDAR 49, I don't want to throw a wet blanket on this, but we  
36 are struggling with the management endpoints that these data-  
37 limited methods give us, and so that's a real big issue.

38  
39 **CHAIRMAN BARBIERI:** You did say that you did not want to be the  
40 wet blanket, Jim? Sean.

41  
42 **DR. S. POWERS:** **The SSC concurs with the review report for SEDAR**  
43 **47, goliath grouper, hence, does not accept the assessment as**  
44 **best available science.**

45  
46 **CHAIRMAN BARBIERI:** Thank you, Sean. We have a proposed motion.  
47 Do we have a second?  
48

1 **DR. CHRISTMAN:** I will second.  
2  
3 **CHAIRMAN BARBIERI:** I have a motion and it's seconded now by  
4 Mary Christman. Is there discussion? Kai.  
5  
6 **DR. BOB SHIPP:** Luiz, can you hear me?  
7  
8 **CHAIRMAN BARBIERI:** We can, loud and clear.  
9  
10 **DR. SHIPP:** It seems, to me, that it's not really the best  
11 available science, but it's inadequate for management purposes.  
12 Isn't that what we're really saying?  
13  
14 **CHAIRMAN BARBIERI:** If I understand Bob correctly, he is making  
15 a friendly amendment to the language that the SEDAR 47, goliath  
16 grouper, is not adequate for management advice.  
17  
18 **DR. SHIPP:** Yes, that's the sense, Luiz.  
19  
20 **CHAIRMAN BARBIERI:** Thank you, Bob. I have Sean.  
21  
22 **DR. S. POWERS:** You know, I understand the spirit of that and  
23 wanting not to -- Because it was a very good job in the  
24 assessment, with what they had to work with, but, to me, the two  
25 -- We always skirt this, and best available science means, to  
26 me, that you can't -- If it's not best available science, then  
27 you don't accept the status determination in the stock  
28 assessment, whereas not suitable for management advice, we have  
29 used that when we've accepted the stock determination, but  
30 didn't want to make projections from that assessment, and so I  
31 guess I will keep it as it was.  
32  
33 **CHAIRMAN BARBIERI:** Thank you. I have Kai and then Will and  
34 then Joe.  
35  
36 **DR. LORENZEN:** My comment was actually in the same spirit as Bob  
37 Shipp's. I felt that, since we have no better science, it is  
38 the best available science, but it's not suitable for management  
39 advice, and that, I guess, would include, in my mind, the stock  
40 status determination.  
41  
42 **CHAIRMAN BARBIERI:** Will Patterson.  
43  
44 **DR. PATTERSON:** I agree with what Bob is getting after here,  
45 that if we state that this isn't best available science, that  
46 seems kind of binary. It just kind of throws everything out.  
47 We can get into semantic arguments about that whole concept,  
48 but, to me, this is the best available science, and I think we



1 could state that in one sentence and then say, however, the SSC  
2 also agrees with the review panel that the assessment results  
3 are not adequate for stock status determination or future catch  
4 allocation. We're saying this is the best that could be done at  
5 the moment. However, it's not sufficient to determine stock  
6 status or set allocations.

7  
8 **DR. S. POWERS:** If you can change the motion to the SSC  
9 concludes that SEDAR 47, goliath grouper, is the best available  
10 science.

11  
12 **DR. PATTERSON:** This is a minor point, but if you state that it  
13 constitutes best available science, that puts it back into this  
14 sort of amorphous thing and not saying it's the best -- Do you  
15 know what I'm saying? That's just my personal opinion.

16  
17 **DR. CHRISTMAN:** I am not 100 percent sure that I would argue  
18 that it's best available science. There are a lot of  
19 assumptions in there that were not -- I don't believe it's at a  
20 point where this is the best we could have done.

21  
22 **CHAIRMAN BARBIERI:** John.

23  
24 **DR. MARESKA:** I would have to agree with that, because if we're  
25 going to make any recommendation to take this and put it into  
26 some of these data-poor models, then how can we say this is the  
27 best available science? It seems contradictory.

28  
29 **DR. S. POWERS:** So hit the "undo" button.

30  
31 **CHAIRMAN BARBIERI:** Unfortunately, I have to agree as well, just  
32 because the fact that the SSC is already integrated into that  
33 review panel, and because there was concurrence in that panel --  
34 That was a peer review that this work did not pass, and I think  
35 it would be contradictory for us to say that this is the best  
36 available science.

37  
38 **DR. S. POWERS:** We could just avoid saying anything about best  
39 available science and just put in the second part that we  
40 conclude that it's not suitable for management advice, and  
41 everybody agrees to that.

42  
43 **CHAIRMAN BARBIERI:** Right. We could go that way.

44  
45 **DR. S. POWERS:** So delete the "concludes the review report" all  
46 the way to "best available science". Where it says "hence", the  
47 SSC concurs with the review report of the SEDAR 47, goliath  
48 grouper, and, hence, does not find the results suitable for

1 management advice.

2

3 **CHAIRMAN BARBIERI:** For the record, you got the Bob Gill thumbs-  
4 up.

5

6 **DR. S. POWERS:** Which, for me, means the world.

7

8 **CHAIRMAN BARBIERI:** Right. Joe.

9

10 **DR. J. POWERS:** I concur with this rendition of it as well, and  
11 I think the thing that bothers me the most is that you don't  
12 want to send a signal that somebody can go back and do something  
13 that's really going to change the results, because, really, what  
14 it comes down is you have next to no F and you're assuming  
15 something about M. What are you going to get?

16

17 It's really what your assumption about M is, and so it's not  
18 like it's going to get resolved, and so this is why I brought up  
19 the other earlier, about you basically have size frequencies and  
20 an index of abundance. What would it take to allow some catch?  
21 Then that is going to have to take some input from the council  
22 itself, I think, in terms of what sort of risk they want.  
23 Anyway, I am supportive of this motion as it is now.

24

25 **CHAIRMAN BARBIERI:** Will.

26

27 **DR. PATTERSON:** I think that's an important last point that Joe  
28 just made. This is the third iteration of this process, and,  
29 although there has been some new information each time, we are  
30 basically repeating the same thing and expecting a different  
31 result, and so there has to be some way to have an adaptive  
32 management process, in order to collect more germane data to  
33 actually do an assessment. Otherwise, we're just going to  
34 repeat this in ten more years.

35

36 One of the things that -- I have heard it stated that folks  
37 aren't willing to invest the resources into collecting  
38 information, to where a different approach could possibly be  
39 taken, but perhaps there could be an evaluation of the fishery  
40 and actually examine what the value of it is. Then say, okay,  
41 what would it take to gather this new information, just as a way  
42 to kind of couch that argument.

43

44 **CHAIRMAN BARBIERI:** I was waiting for Dr. Lorenzen to jump in,  
45 but he is hesitating, and so I am not going to put him on the  
46 spot.

47

48 **MR. ATRAN:** Are you ready to -- I can wait until after you if

1 you want. I was going to suggest a little wordsmithing.  
2  
3 **DR. LORENZEN:** It wasn't on the motion. It was on the idea of  
4 developing a process for looking at the question that Joe posed,  
5 and I just wanted to mention that we indeed have a project that  
6 is looking at that. It's done by Claudia Friess, who is well  
7 known to many of you, as part of her PhD. This is maybe  
8 something that we can take forward as something that is a bit  
9 separate from dumping it into the data-poor bin or actually  
10 something that is more specifically dealing with the very  
11 particular situation that we have with the goliath grouper.  
12  
13 **CHAIRMAN BARBIERI:** That's why I kept looking at you, because I  
14 was hoping that you were going to bring this up, because I think  
15 it's very relevant to defining some step, some way forward, here  
16 with this. If we wait to see what is going to be coming out of  
17 Claudia's work, I think it would be informative in helping us  
18 see our way forward with this.  
19  
20 **DR. LORENZEN:** I think the situation we're in at the moment will  
21 also help to take that work forward.  
22  
23 **CHAIRMAN BARBIERI:** Yes, Steven.  
24  
25 **MR. ATRAN:** I was going to suggest a little wordsmithing. There  
26 are actually two things that the SSC is supposed to take out of  
27 a stock assessment, status determination and management advice,  
28 and, all the talk here, I assume I'm correct in concluding that  
29 you're not going to make a determination of status  
30 determination, that you don't have that information, and so I  
31 was going to suggest maybe changing this to say "hence, does not  
32 find the results suitable for status determination or management  
33 advice." That would cover both things that you're supposed to  
34 address.  
35  
36 **DR. S. POWERS:** **That's fine.** I think it's a little bit  
37 redundant, but that's fine. **So results suitable for stock**  
38 **status or management advice.**  
39  
40 **MR. ATRAN:** You have had, and I'm trying to remember what stock  
41 it was, a couple of SSC meetings ago, where you did conclude  
42 that the assessment could be used for status determination, but  
43 not for making any ABC recommendations.  
44  
45 **DR. S. POWERS:** **Change "determination" to "status", please.**  
46 **Also change "and" to "or".**  
47  
48 **CHAIRMAN BARBIERI:** Okay. Any additional discussion points from

1 the committee? It looks like we've got to the point here that  
2 we can vote on this motion. We got a big smile from Karen here,  
3 and so we are going in the right direction. Let me then phrase  
4 it this way. The motion on the board to be voted on, all those  
5 opposed, please raise your right hand.  
6

7 **MR. ATRAN:** You could have just asked if there was any  
8 opposition.  
9

10 **CHAIRMAN BARBIERI:** I could, Steven, but I did not want to, if  
11 that's okay.  
12

13 **MR. ATRAN:** You're the Chairman.  
14

15 **CHAIRMAN BARBIERI:** By the way, Steven, I would not make an  
16 explicit suggestion to amend a motion that the SSC is making. I  
17 would raise the comment and let the committee make that, because  
18 I would guess that legal counsel could look at this differently  
19 if the phrasing came specifically from a staff person who is not  
20 a member of the committee, given the requirements of NS-2 and  
21 the reauthorized Act, and just a word of warning, please. I  
22 mean, if you raise the issue and say, well, we need to also  
23 address X, Y, and Z, let people come up, but I would not put  
24 words on the board, because that might have a legal  
25 interpretation that is not kosher. **With that, do I have anybody**  
26 **opposed to this motion? Is anybody on the webinar opposed to**  
27 **this motion? Speak now, or forever hold your peace. If not,**  
28 **the motion passes unanimously.**  
29

30 Anything else regarding goliath grouper? I guess this addresses  
31 -- Ben.  
32

33 **DR. BLOUNT:** Luiz, thank you. Just a point of information.  
34 Will the South Atlantic SSC also review this? The reason I ask  
35 I notice that Carolyn Belcher was one of the participants in the  
36 review process, and, of course -- I don't think she's Chair  
37 anymore, but, anyway, is this joint with the South Atlantic?  
38 That's out of curiosity really more than anything else.  
39

40 **CHAIRMAN BARBIERI:** Yes, the South Atlantic SSC will see this in  
41 October, yes. That's one of the reasons that I want to be  
42 there. Any other actions or issues regarding SEDAR 47? Ms.  
43 Bosarge.  
44

45 **MS. BOSARGE:** At the risk of sounding unintelligent, since this  
46 is not my baby or my backyard, but is this particular stock  
47 getting to the point where there would be a comfort level for  
48 maybe some sort of very limited exempted fishing permit to get

1 you some of this data that you're looking for, or is it not even  
2 close to something like that?

3

4 **CHAIRMAN BARBIERI:** Will.

5

6 **DR. PATTERSON:** For one thing, one thing that that might do is  
7 examining these indices and seeing how they perform when you  
8 have some type of limited harvest, and so that would be  
9 information, and so that's kind of what I was alluding to as far  
10 as adaptive management.

11

12 If the stock has increased to levels in certain parts of its  
13 range, that's another issue, is that you have high densities,  
14 and this is what Luiz was alluding to earlier of density versus  
15 abundance, and we are starting to see goliath more commonly in  
16 the northern Gulf of Mexico and areas where they once were more  
17 abundant historically.

18

19 That would be one way to kind of track performance of these  
20 indices in particular, is if you had some type of limited  
21 harvest. I know it's a very touchy subject, and there would  
22 have to be lots of review that goes into that, but it's  
23 something that should be considered, I think.

24

25 **CHAIRMAN BARBIERI:** Sean.

26

27 **DR. S. POWERS:** I would agree with that, and I don't know if we  
28 want to follow that up with a motion or just simply put it in  
29 our summary that some of the -- We would need to hear from more  
30 of the SSC whether they wanted to support something like that.

31

32 **CHAIRMAN BARBIERI:** Well, if I may, in a sense, instead of a  
33 motion to that effect explicitly -- I mean, if it is a motion  
34 that would encourage additional data collection that might  
35 involved sacrificing and collecting some individuals for life  
36 history information or the like, I think that, that way, the  
37 council can proceed according to what it feels is most  
38 appropriate, or it might come back to the SSC and ask if this is  
39 a situation where an exempted fishing permit might be  
40 appropriate. Will.

41

42 **DR. PATTERSON:** I think we should consider that though, and that  
43 it should be considered in the context of what's the value of  
44 this stock, because there is a whole ecotourism dive component  
45 that is not being factored in here. Having fish in the water  
46 has value, and it brings monetary value to the State of Florida,  
47 where the fish predominantly occurs, and so I don't think you  
48 can examine one of those questions without fully looking at the

1 economic benefit of fish is as part of the resource.  
2  
3 **CHAIRMAN BARBIERI:** Marcus.  
4  
5 **DR. DRYMON:** Just interesting to this conversation is a study by  
6 some NMFS folks and Miami folks, where they're looking at  
7 willingness to pay for goliath grouper harvest tags, and they  
8 estimate that value to be somewhere between thirty-five and  
9 eighty-dollars. Again, it's limited harvested based on specific  
10 tags per fish.  
11  
12 **CHAIRMAN BARBIERI:** Along those lines. Yes, Sean.  
13  
14 **DR. S. POWERS:** But I would think there are some holes that are  
15 just going to have to be filled with collection. You have  
16 fecundity on two. How else would you do fecundity? I would  
17 assume many of the models are going to need some kind of  
18 fecundity, but I agree with you that hopefully the council knows  
19 to come back to us if that comes up.  
20  
21 **CHAIRMAN BARBIERI:** Kai had made some comments earlier about  
22 additional data collection or additional work, I guess, that you  
23 were mentioning regarding Claudia's --  
24  
25 **DR. LORENZEN:** What she is working on is exactly, in a sense,  
26 and there is additional data collection that will -- There might  
27 be some additional data collection. Primarily, she is  
28 essentially doing a management strategy evaluation that is  
29 looking at this current situation and the question of what sort  
30 of information would be needed to move forward and what criteria  
31 one might use, and so, essentially, it's addressing the question  
32 that we have in front of us at the moment, and I don't know  
33 whether it would be appropriate for the committee to encourage  
34 that in some way or do we need to do something at this stage to  
35 take that forward?  
36  
37 **CHAIRMAN BARBIERI:** I was looking at Will, because I was  
38 wondering if, in that study, there is a component of some  
39 socioeconomics.  
40  
41 **DR. LORENZEN:** Yes, there absolutely will be. That concerns  
42 both the fishery and the dive sector.  
43  
44 **DR. PATTERSON:** So Claudia will have this ready for our next  
45 meeting is what you're saying?  
46  
47 **DR. LORENZEN:** She is listening in, and I think she's taking  
48 notes, and so she will have that ready.

1  
2 **CHAIRMAN BARBIERI:** Steven.

3  
4 **MR. ATRAN:** Just a reminder, and, actually, I think about half  
5 of you weren't even on the SSC the last time goliath grouper was  
6 assessed, but I was just looking at the SSC summary meeting, and  
7 this is from January of 2011, and, after reviewing the goliath  
8 grouper assessment, it says the SSC requests the council to  
9 convene a workshop to gather scientists and assessment  
10 biologists familiar with goliath grouper biology and the recent  
11 assessment. The goals would be to gather all available  
12 biological information, identify critical habitat data, and  
13 produce a coordinated scientific sampling plan to address these  
14 needs in the next three to five years, where possible. It  
15 sounds like, back in 2011, there was a recommendation for some  
16 sort of scientific take to be developed.

17  
18 **DR. LORENZEN:** I think there was a recommendation for a  
19 workshop, and the workshop actually happened, and that came up  
20 with some recommendations, but we never sort of got to this  
21 stage of actually getting to an experimental harvest.

22  
23 The other thing that happened was there was a stakeholder survey  
24 and a workshop actually that was supported by the council to  
25 bring the very adversarial stakeholders in this fishery to the  
26 same table, and so some things happened there, too.

27  
28 **CHAIRMAN BARBIERI:** Ben.

29  
30 **DR. BLOUNT:** One last question. There are areas in the Keys  
31 where this fishery is prosecuted fairly systematically, and it's  
32 important socioeconomically. Is the area within the Florida  
33 Keys Marine Sanctuary and the areas where fishing is allowed, or  
34 is it outside of that? Of course if it's within that, then  
35 you've got an extra dimension, in terms of the scientific  
36 community being involved in discussions on this, and I was just  
37 curious.

38  
39 **CHAIRMAN BARBIERI:** I will defer to others, but I would say  
40 both. I mean, you have goliath grouper all over the Florida  
41 Keys, and I would say both within sanctuary areas, closed areas,  
42 as well as open areas. Now, it's hard to get a feeling of the  
43 actual abundance.

44  
45 Actually, FWC does have a survey that has been going on, an  
46 underwater visual survey, that has been going on down there for  
47 quite some time, and that survey doesn't actually observe a  
48 whole lot of goliath. This creates this issue about abundance

1 and distribution and density that we were talking about, that  
2 breaking this up has been very difficult. Chad Hanson, member  
3 of the public.

4  
5 **MR. HANSON:** Thank you, Mr. Chairman, for letting me speak as a  
6 member of the public back here. This conversation makes me  
7 recall the red drum report that was put together by Brian  
8 Linton, in I think it was 2008, that described how an assessment  
9 could be done and what data would be needed and how that would  
10 be conducted and how many samples and such to do a bonified  
11 stock assessment.

12  
13 It seems, to me, an EFP route could be a viable option, but I  
14 think we may be getting the cart before the horse, where I think  
15 what that conversation seems to be circling around is putting  
16 together, as Mr. Atran mentioned, another small subset of the  
17 SSC or some working group.

18  
19 Now we're at a different place in time. It's very similar, but  
20 we're in a different position with new data, where a working  
21 group could get together and talk about what data we have and  
22 where we could go with that and how would you get at how many  
23 samples you need, and be pretty specific, because I have seen  
24 EFPs come to the council that are not that scientific, if you  
25 will, and sometimes the EFPs get used as a way to get access to  
26 a fishery and may not have that much of an element of science,  
27 and so I would want it to be structured and pretty rigorous in  
28 science, but I think having a report or some process that  
29 defines what kind of information is actually needed to get  
30 through a stock assessment and be explicit in how you get that  
31 data would be a good step forward.

32  
33 **CHAIRMAN BARBIERI:** Thank you, Chad. I have been looking at  
34 Kai, and kind of looking at Leann as well and thinking -- She  
35 sort of silently mouthed, like, well, perhaps we will wait for  
36 Claudia's work to be completed, so we have some more objective  
37 set of structure, perhaps, or set of recommendations. This is  
38 part of her dissertation, and it involves different dimensions.  
39 There is a biological one, there is a socioeconomic one, and so  
40 I think this would be fairly inclusive and informative, and that  
41 would help us kind of move forward from there.

42  
43 **DR. LORENZEN:** Yes, I think so. Also, it might be useful to  
44 actually convene a working group at some stage, of perhaps some  
45 SSC members and some council representation. I don't know  
46 exactly when would be the best time to do that, but maybe it  
47 would be appropriate to make a recommendation to that effect.



1 **CHAIRMAN BARBIERI:** I am seeing Dr. Simmons back there.

2  
3 **DR. SIMMONS:** Thank you, Mr. Chairman. I am not against  
4 convening another group to look at this after the new data that  
5 has been used in the most recent stock assessment, but just  
6 remembering that we did convene that joint committee, that joint  
7 steering committee. We did have a big workshop, and we did have  
8 some information from the Science Center presented about taking  
9 400 animals and trying to get better information.

10  
11 Now, we didn't get into all the details about what size and sex  
12 and how it should be distributed and all those kinds of things,  
13 but, at some point, I think a number came up. It was around 400  
14 animals that could be taken, and certainly that can be explored  
15 again, but I feel like some of that has already been hashed out,  
16 and maybe we have more information and now and it could be  
17 hashed out again, but maybe what we could do is put all those  
18 reports up, so people have access to them, tonight, and you can  
19 kind of look at them, because there was a lot of work done with  
20 those workshops and that steering committee that we convened.  
21 That was made up a lot of individuals, and so I will stop there.

22  
23 **CHAIRMAN BARBIERI:** By the way, let me jump in. Carrie, I think  
24 that's a very good suggestion. If you could put a folder there  
25 on the FTP site that would have those reports, because there is  
26 quite a bit of information there. For the new members, that  
27 haven't really seen all of that, I think this would be very  
28 helpful and bring perspective about all the stuff that has been  
29 done, and then we can discuss later formation of a group to  
30 follow up and kind of develop additional, perhaps more specific,  
31 recommendations going forward.

32  
33 I think that, for now, we should have enough. I see Steven  
34 taking notes as we're talking, and so we should have enough in  
35 our report. We have this motion, plus we have some  
36 recommendations as far as following up with the folder, with  
37 information from the past working groups, and there is some  
38 discussion points there that have been captured for our report.  
39 Is there anything else that anybody wants to bring up regarding  
40 goliath grouper? Okay. Anybody in webinar-land?

41  
42 I am not hearing anybody, and I assume that this concludes the  
43 goliath grouper issue. Joe, thanks for coming over and giving  
44 this thorough review. Don't interpret this as a shot on you and  
45 the vast amount of work that you did on this. I mean, this is  
46 the nature of working on data-poor species, and this is a big  
47 challenge, really, to have an assessment that is really  
48 informative for a species that has this level of lack of

1 information, and so we appreciate you putting so much time and  
2 effort and as well as the SSC members that have participated in  
3 the review process and made some recommendations. Steven.

4  
5 **MR. ATRAN:** Just so I'm clear, we'll dig up those old reports,  
6 and we will put them up on the FTP site, but we're not going to  
7 come back to the SSC unless the council has a specific request.

8  
9 **CHAIRMAN BARBIERI:** Right, not specifically. Now, if Kai or  
10 somebody else would like, along the way, during the open agenda  
11 in the future, and decides to explore further and make some  
12 other recommendation, that's possible, but I don't see anything  
13 specific at this point. Okay. That brings us to the last item  
14 on the agenda for our Standing and Reef Fish SSC Session #1,  
15 which is Evaluation of Candidate Species for Future Data-Poor  
16 Assessments. Mr. Rindone, are you on the phone or the webinar  
17 so you can assist us?

18  
19 **EVALUATION OF CANDIDATE SPECIES FOR FUTURE DATA-POOR ASSESSMENTS**

20  
21 **MR. RYAN RINDONE:** Mr. Diaz made a motion at the June council  
22 meeting asking that the staff work with the Science Center to  
23 evaluate new candidates for the data-poor species effort, and  
24 part of it had to do with some of the other species that were  
25 proposed during this first go-round, SEDAR 49, and perhaps not  
26 having enough data to be considered using the DLM tool.

27  
28 In looking at the species that are in our fisheries management  
29 units that we either do not have assessments for or are not  
30 currently attempting an assessment for, we have nine altogether,  
31 and one of those is blueline tilefish, which may be assessed in  
32 SEDAR 50 for the Gulf. The Steering Committee is meeting today  
33 and tomorrow, and they are discussing that as one of their  
34 agenda items.

35  
36 Of the remaining species that we don't have an assessment for  
37 and that we are not actively working on something, it's queen  
38 snapper, blackfin snapper, cubera snapper, silk snapper, warsaw  
39 grouper, yellowfin grouper, goldface and blueline tilefish, and  
40 the banded rudderfish. The council had talked about a couple of  
41 these during the initial request for candidate species for SEDAR  
42 49, and, ultimately, the Science Center had put forward the  
43 eight species that were attempted under that effort.

44  
45 Now, I won't speak for the Science Center. They would know best  
46 as far as what they can take on, but, with only nine species  
47 remaining that are in our FMUs that we haven't actually  
48 attempted, perhaps those could all be done under a successive

1 data-poor assessment effort, and that is a question.

2  
3 **CHAIRMAN BARBIERI:** Thank you, Ryan. I see Shannon raising her  
4 hand to address that question.

5  
6 **DR. CALAY:** Hi, Ryan. Thanks for the question. As far as our  
7 data-limited assessments go, SEDAR 49 conducted assessments on  
8 eight stocks, and those eight stocks were chosen essentially  
9 through an SEFSC/council process, and they weren't necessarily  
10 the eight stocks that were most likely to be successful in a DLM  
11 context.

12  
13 I think that it is possible to conduct additional stock  
14 assessments. However, it is yet to be seen whether SEDAR 49  
15 results are considered useful for management by this SSC, and  
16 so, in some ways, I think this conversation is premature,  
17 because, before we decide which stock assessments to recommend,  
18 we might need to review SEDAR 49 and determine if we have a  
19 management framework in place that is flexible enough to allow  
20 us to use these results for management, and I think that's going  
21 to actually take at least one SSC meeting to determine.

22  
23 It was alluded to, and you will see it soon, but the results of  
24 these methods depend on reference periods that you want to use,  
25 like reference numbers of years, et cetera. It's unclear, in  
26 some cases, whether these results produce ABC and then we need  
27 to determine how to calculate OFL, or whether this SSC would  
28 decide that this is an OFL and then we need to calculate ABC,  
29 and so these decisions all need to be made. We need to have an  
30 ABC control rule that allows us to use these results. Then we  
31 can determine how many stocks we can take on in the future.

32  
33 If, for example, lane snapper, which is one of probably the more  
34 data-rich of these models, if, for some reason, those  
35 assessments were rejected by this SSC, in my mind, there would  
36 be no reason to proceed until we determine what went wrong. We  
37 would need to do some kind of post-analysis to determine what we  
38 need to do to make these things useful before we commit to  
39 additional species.

40  
41 **MR. RINDONE:** I agree with what Shannon is saying, and, with  
42 respect to which species would be good candidates, of course,  
43 some sort of data discovery process, similar to what we do at  
44 the very beginning of benchmark efforts, might be appropriate,  
45 and it would certainly be something that the SSC could be  
46 involved in, to try to figure out what data are available, but  
47 having some idea of how these would be used is certainly key,  
48 but the council's main concern was this data-poor effort seemed

1 like something that could show promise, especially for species  
2 which we hadn't previously considered assessing, and so they  
3 wanted to know how do we move forward to make sure that we're  
4 best using our time and our energies and focusing on those  
5 species which are more likely to be successful.

6  
7 **DR. CALAY:** Jeff can fill me in on the details if I am unaware,  
8 but part of the SEDAR 49 report process, or report of the  
9 assessment and review workshops, will contain a data triage  
10 report. That should provide some information on what the more  
11 likely species are to assess in the future.

12  
13 **DR. ISELY:** I will comment on that. SEDAR 49 is just going to  
14 be those eight species, but, following SEDAR 49, and by  
15 Christmas, as an addition, we are in the process of doing a data  
16 triage on all of the Gulf FMP species, and so we will have some  
17 idea of catch, catch history, any kind of effort series we have  
18 and whether there are catch per unit effort data, where we can  
19 develop sort of CPUE index.

20  
21 We're also looking at what length data we have, so we can look  
22 at some of the annual mean length estimator techniques that are  
23 coming out, and we're also going to look at the associated  
24 species or problems in species identification or whether these  
25 are bycatch species or try to characterize the catch and not  
26 just assume everything is an ORCS species, and so those are the  
27 things we're trying to come up with by Christmas, and so we've  
28 turned in a draft of the SEDAR 49 report, and now we're going  
29 into the data triage portion while we wait for results.

30  
31 **CHAIRMAN BARBIERI:** Thank you, Jeff and Shannon. I think that,  
32 right there, Ryan, is good information that we can help flesh  
33 out in our report to the council regarding the current status of  
34 where we are in using these data-poor methodologies for  
35 additional stocks and that, most likely, sometime early next  
36 year we should have more details to bring up to the council.

37  
38 **MR. RINDONE:** I completely agree.

39  
40 **CHAIRMAN BARBIERI:** Thank you, Ryan. Anybody else have any  
41 other points or comments? Jim.

42  
43 **DR. TOLAN:** Going into SEDAR 49, I had very high hopes for the  
44 myriad of tools available. Of the eight species, I think we  
45 tossed two of them completely. Two of them had life history  
46 issues that made the information not all that great, and so half  
47 of them we were able to come up with something out of the end.  
48 Now, whether or not it's suitable for management, we will find

1 out at the next couple of meetings, but I had high hopes going  
2 into it. Coming out of it, nine species is a lot to tackle in  
3 one SEDAR, if that's sort of the focus that Ryan is getting at.

4  
5 **CHAIRMAN BARBIERI:** Shannon.

6  
7 **DR. CALAY:** I would agree. I mean, we're basically still  
8 learning how to utilize this tool and how to produce the sorts  
9 of information that we need to be able to evaluate the results,  
10 and so, at the moment, eight stock was a lot to try to do, and  
11 Skyler, Jeff, Matt, and the entire team did a really good job.

12  
13 The assessment report has been turned into the panelists now,  
14 but I think that, as we -- Once we conduct a few of these, we  
15 will have a handle on these management strategy evaluations. At  
16 that point, we will know what methods are most useful here in  
17 the Gulf of Mexico for stocks with the type of data that we  
18 possess.

19  
20 That may facilitate the process and speed it up, but we're still  
21 in the learning curve, and I think, at this point, doing more  
22 than four stocks is a tax on the system. Probably four, and  
23 maybe, from the data triage, maybe the four that we know the  
24 most about, would be doable, after we determine if these results  
25 from SEDAR 49 are useful.

26  
27 **CHAIRMAN BARBIERI:** Thank you, Shannon. Anything else, any  
28 other questions or comments? Ryan, do you feel that we have  
29 developed enough discussion and recommendations that will help  
30 inform the council, particularly Mr. Diaz, about how the  
31 committee feels about this and that we do have a way forward,  
32 but we're just waiting for some additional, more-detailed  
33 results to make a better-informed decision?

34  
35 **MR. RINDONE:** I think so, and the council has indicated, in  
36 their assessment priorities, that they aren't really considering  
37 another data-poor effort until approximately 2020, depending on  
38 what other stuff comes up between now and then, and certainly  
39 Ms. Bosarge is present there, and she can speak to how she feels  
40 about this, but I think this provides enough information for the  
41 council in general to know where progress is headed.

42  
43 **CHAIRMAN BARBIERI:** Ms. Bosarge, anything to add?

44  
45 **MS. BOSARGE:** No, I think that will give some direction, and I  
46 think Dale just wanted to make sure that we don't spin our  
47 wheels on our side. If you can kind of point us in the right  
48 direction, and I don't want to put his words in his mouth, but

1 almost like a ranking for some of these data-poor species that  
2 we have, which ones do you think would be the top candidates?  
3 Obviously that's going to be informed by this iteration that  
4 you're going through now, but, at some point, if you could point  
5 us in the right direction a little more, so that we don't ask  
6 people to do things that really aren't going to be beneficial  
7 for us as managers.

8  
9 **CHAIRMAN BARBIERI:** Right, and then the report that is coming  
10 out around Christmastime should have some additional information  
11 on the data availability and different types of data for the --

12  
13 **DR. ISELY:** We will have that ranking for all the Gulf FMP  
14 species.

15  
16 **CHAIRMAN BARBIERI:** Harry Blanchet.

17  
18 **DR. HARRY BLANCHET:** A quick note. After going through the  
19 SEDAR 49, recall that this is for data-poor species, and it  
20 really has -- I really would prefer using that tool, as nice as  
21 it is, for really the stuff that does not fit into a standard  
22 assessment. I don't want to just say we've got a tool and so  
23 let's throw everything into it. If it fits that tool, that  
24 should not be the criteria. The criteria should be we have  
25 nothing else that we can do for this, if that makes sense.

26  
27 **CHAIRMAN BARBIERI:** Yes, it does, Harry, and Shannon has some  
28 comments there.

29  
30 **DR. CALAY:** Ideally, I think you're right, Harry. In practice,  
31 we can probably only add maybe one benchmark or research track  
32 assessment of a new stock each year, and so if there is any  
33 utility in moving from recent landings history alone to data-  
34 limited methods, we could do an interim step for some of these  
35 stocks of producing data-limited advice, until such a time as we  
36 determine whether these could go into a data-rich framework.  
37 Again, it really remains to be seen whether this group  
38 determines that SEDAR 49 can provide useful management advice.

39  
40 **CHAIRMAN BARBIERI:** Thank you, Harry. Anybody else in webinar-  
41 land? Anybody else in webinar-land that has any comments to  
42 make regarding this issue? Seeing none, I think this completes  
43 this issue. I do feel that, although we don't have an actual  
44 formal motion, as we see our draft report being circulated, I  
45 think we have enough there to flesh it out and provide some good  
46 information to the council. Steven, I think this concludes what  
47 had been planned for today. I'm not sure if in the next ten  
48 minutes that we have time or if it makes sense for us to revisit

1 the dates for the next SSC meeting.

2  
3 **MR. ATRAN:** Actually, I think we've probably concluded that -- I  
4 didn't hear any objection to going back to the January dates for  
5 the next SSC meeting, and the whole 2017 schedule is really just  
6 for your information. If you chance, look at it. If you know  
7 you have a conflict with the proposed dates, let me know as soon  
8 as possible.

9  
10 Also, like I said, in March, we're probably going to have to  
11 move the March SSC meeting so it doesn't conflict with Gulf  
12 States, and so if you have a preference whether to move it to  
13 the week before or the week after, let me know, but it's a minor  
14 thing. We always try to give the upcoming tentative schedule to  
15 you as part of the meeting materials, and there is really no  
16 need to discuss it unless you think we have something to  
17 discuss.

18  
19 **CHAIRMAN BARBIERI:** Bob.

20  
21 **MR. GILL:** Thank you, Mr. Chairman. Tomorrow's agenda looks  
22 pretty heavy, to me. Would it make sense to try and take care  
23 of Agenda Item XI, the Updated SEDAR Schedule, this afternoon?  
24 Normally that's a fairly short topic, and perhaps it might free  
25 some room up for the other discussions tomorrow.

26  
27 **DR. PATTERSON:** Or Item XV, while Ryan is on the phone.

28  
29 **CHAIRMAN BARBIERI:** Ryan, hopefully you're still on the phone.

30  
31 **MR. RINDONE:** I'm still here.

32  
33 **CHAIRMAN BARBIERI:** Okay. Thank you. We had two suggestions  
34 here that sound good to me, in terms of addressing Agenda Item  
35 Number XI, Review of Updated SEDAR Schedule, and then perhaps a  
36 discussion, if we have enough time, of Item XV, under Other  
37 Business, which is the Terms of Reference, Schedule, and  
38 Participant Solicitation for SEDAR 50, blue-line tilefish. Ryan,  
39 my guess is that the tilefish is going to go pretty fast, right,  
40 from what I understood from the discussion earlier this  
41 afternoon with the SEDAR Steering Committee.

42  
43 **MR. RINDONE:** I still don't have a definitive number of people  
44 that are going to be able to participate, in terms of number for  
45 each of the workshops. However, we will take any volunteers  
46 that the SSC wants to put forward and offer those to the  
47 council, and they will work with what they have to work with, in  
48 terms of what SEDAR -- Yes, we can move through that pretty

1 quickly.

2

3 **CHAIRMAN BARBIERI:** Just to give you some background, this is  
4 blueline tilefish. It's primarily a fishery that is South  
5 Atlantic and Mid-Atlantic now. Recently, there was a SEDAR  
6 stock identification, the stock ID workgroup, that was put up up  
7 there, and that workshop concluded that the stock in the Gulf is  
8 not genetically different from the stock in the South Atlantic  
9 and the Mid-Atlantic, and so the assessment, the SEDAR 50  
10 assessment, has been expanded, the geographic scope of that  
11 assessment, to now include the Gulf as well.

12

13 Ryan is requesting whether we have any members available and/or  
14 interested to participate in SEDAR 50, which I don't remember  
15 what the schedule is, Ryan, and perhaps you can refresh our  
16 memory.

17

18 **MR. RINDONE:** The current schedule has the data evaluation  
19 workshop, or the data workshop, being in Charleston from January  
20 23 to 27 of 2017, which, if I had to guess, would overlap with  
21 the SSC meeting, or at least it would be rather close to it.  
22 The assessment workshop would be conducted via webinar, as it  
23 has been for the last several times, but they are proposing have  
24 an actual in-person assessment workshop the week of May 22 in  
25 2017. Then the review workshop would be August 29 through 31.

26

27 The entire assessment would occur in 2017, with a terminal year  
28 of 2015. The South Atlantic would coordinate the assessment  
29 primarily, since the majority of the stock, as defined by the  
30 stock ID group, occurs within the South Atlantic. The issue  
31 that the SEDAR Steering Committee is taking up is that only  
32 fifteen samples were used from the Gulf of Mexico to establish  
33 whether or not genetic homogeneity existed between the basins,  
34 and, beyond that, the Steering Committee is considering the  
35 management implications of assessing both the Gulf and the  
36 Atlantic as a single stock and what implications that might  
37 have.

38

39 Of course, we have other stocks which are not genetically  
40 dissimilar between the Gulf and the Atlantic. However, they are  
41 managed separately and assessed separately, and so there is  
42 that, which is being considered also.

43

44 **CHAIRMAN BARBIERI:** Ryan, in the interest of time, thank you for  
45 that background and for pointing out the schedule. I think it's  
46 helpful. Perhaps what we can do is, now that folks have all  
47 this information, process this overnight and then tomorrow we  
48 can see whether we have any interest from the committee in



1 volunteering for this workshop.

2  
3 **MR. RINDONE:** That may be more appropriate, given the SEDAR  
4 Steering Committee discussions.

5  
6 **CHAIRMAN BARBIERI:** Right. Correct. Ryan, if you could move on  
7 to the schedule then.

8  
9 **MR. RINDONE:** The SEDAR assessment schedule? Sure.

10  
11 **CHAIRMAN BARBIERI:** Yes, please.

12  
13 **REVIEW OF UPDATED SEDAR SCHEDULE**

14  
15 **MR. RINDONE:** All right. You guys have an update in front of  
16 you, and the FWC has requested that the black grouper assessment  
17 be pushed back, in terms of its delivery date, to the spring of  
18 2017, and this will help allow some additional time for maybe a  
19 workshop and some public involvement and just some expanded  
20 application of the workshop process that SEDAR usually has.

21  
22 The gag and greater amberjack update assessments are well  
23 underway, and they are still scheduled to be delivered by their  
24 noted dates, and you guys heard about the status of SEDAR 49,  
25 the data-poor assessment, and where it stands, and that one  
26 still looks to be on schedule as well. Please interrupt me if  
27 anyone has a comment or a question, et cetera.

28  
29 In 2017, we have the MRIP calibration updates, which are, as the  
30 Science Center has noted, they're kind of like mini updates.  
31 They're updating the recreational catch indices for the species  
32 that we have listed, and that's all listed in the order of  
33 priority, and those will occur from 2017 through December of  
34 2018. Then we'll be beginning the gray snapper benchmark  
35 assessment in the spring of 2017, and that should be concluded  
36 very early in 2018.

37  
38 We also have a standard assessment for red snapper beginning in  
39 the fall of 2017, and that should be done about March of 2018.  
40 Then the FWC will be assessing yellowtail snapper as a benchmark  
41 assessment and migrating that into the stock synthesis, and that  
42 will take the entirety of 2017 to complete. If we move down to  
43 2018 --

44  
45 **CHAIRMAN BARBIERI:** Ryan, we have a question here from John  
46 Mareska.

47  
48 **DR. MARESKA:** Ryan, was the research track considered for gray

1 snapper, since this is its initial assessment? I was just  
2 concerned, kind of along the lines of Dale Diaz, that are we  
3 getting the bang for our buck? I would hate to get an  
4 assessment where we say it's best available science, but not  
5 suitable for management.

6

7 **MR. RINDONE:** This is for gray snapper?

8

9 **DR. MARESKA:** Yes.

10

11 **MR. RINDONE:** The Steering Committee actually talked about this  
12 a little bit, and, to some extent, it's a pilot for the research  
13 track and operational track assessment framework, and the SEDAR  
14 Steering Committee has noted that they want to review this pilot  
15 run of the research track and operational track approaches prior  
16 to implementing it across SEDAR. Now, we could start with gray  
17 snapper over scamp. However, it wouldn't be able to be done in  
18 the absolute sense of a research track assessment followed by an  
19 operational track, because, logistically speaking, the gray  
20 snapper assessment effort has already begun. Data collection  
21 has already been done and getting folks lined up to participate  
22 in the assessment, et cetera. All of that is already underway.

23

24 The Steering Committee heard from Dr. Porch about perhaps doing  
25 the review for the gray snapper benchmark assessment more like a  
26 research track and the following that up with a review by the  
27 SSC that would be akin to what you guys would be responsible for  
28 under the operational track for gray snapper or what management  
29 advice would be provided.

30

31 The pros to this is that it could accelerate the timeline for  
32 being able to review a pilot of this new assessment framework.  
33 A potential con would be that, by hybridizing the two together  
34 for one species, to try and get it done sooner, if there -- It  
35 may mask issues with logistics associated with trying to  
36 implement this new approach or it may unfairly represent the  
37 proposed framework if something negative does occur. The pro  
38 being go ahead and do it, gray snapper, and the con might lead  
39 you to go ahead and wait to do it with scamp in 2018, as it's  
40 currently scheduled.

41

42 **CHAIRMAN BARBIERI:** Thank you, Ryan. I have another question  
43 from Will Patterson.

44

45 **DR. PATTERSON:** Ryan, I remember the last time we talked about  
46 the research track versus operational deal that it was kind of  
47 being proposed, but, seeing it on the schedule here, I guess  
48 this now has been adopted as how things are going to work after

1 2018, and is that true?

2  
3 **MR. RINDONE:** No, that is not 100 percent accurate. Like I was  
4 saying, the Steering Committee wants to pilot this new  
5 assessment framework before adopting it across all the SEDAR  
6 cooperators of us, the South Atlantic, and the Caribbean. The  
7 initial idea was to do that with scamp, since we were going to  
8 do scamp with both the Gulf and the South Atlantic together.

9  
10 Then the Steering Committee would review, after scamp was  
11 completed through the research track, kind of like a post-mortem  
12 of how did it go, what worked, what didn't, what tweaks should  
13 be made, et cetera, and try and fine-tune the process to  
14 establish some SOPPs for implementing it across the board. If  
15 there happened to be too many problems with it, then it would be  
16 going back to drawing board. If it works well, then implement  
17 it.

18  
19 **DR. PATTERSON:** In that process though, the research track, the  
20 idea still is not to produce estimates of stock status or  
21 projections, and is that still how those are envisioned?

22  
23 **MR. RINDONE:** That is correct.

24  
25 **CHAIRMAN BARBIERI:** Thank you, Ryan. Any other questions or  
26 comments for Ryan regarding the schedule? Steven.

27  
28 **MR. ATRAN:** Actually, it's a question for you. I thought FWC  
29 was going to be doing an update assessment on hogfish in time  
30 for completion by 2018. Our Amendment 43 has a constant catch  
31 of I think 218,000 pounds until 2018, and then, in 2019, the ACL  
32 drops down to 159,000 pounds if we don't have a new assessment,  
33 and so where do we stand on that, and should that be added to  
34 the schedule?

35  
36 **CHAIRMAN BARBIERI:** Yes, I would say, but that is up to the  
37 councils and the Steering Committee. I mean the FWRI, FWC and  
38 FWRI, is ready to engage if that update is prioritized by the  
39 Steering Committee, but since they are the ones who actually put  
40 together this schedule, we usually wait for them to come to us  
41 and request, after they put this on the schedule. It's  
42 something that perhaps Ryan can mention tomorrow if there is an  
43 opportunity, under the open agenda tomorrow, since the Steering  
44 Committee is still meeting through tomorrow.

45  
46 **MR. RINDONE:** Would that be a standard or an update assessment  
47 for hogfish?

48

1 **CHAIRMAN BARBIERI:** That would be an update. That one was  
2 assessed last time already with SS3, and so it could be just a  
3 regular update.  
4  
5 **MR. RINDONE:** In 2018?  
6  
7 **CHAIRMAN BARBIERI:** That is correct.  
8  
9 **MR. RINDONE:** What would be the terminal year?  
10  
11 **CHAIRMAN BARBIERI:** I don't know yet. That's to be determined.  
12  
13 **MR. RINDONE:** All right. I will make sure to note it.  
14  
15 **CHAIRMAN BARBIERI:** Thank you, Ryan. Any other comments or  
16 questions for Ryan regarding the SEDAR schedule?  
17  
18 **MR. RINDONE:** I can continue through 2018 and 2019, if you would  
19 like.  
20  
21 **CHAIRMAN BARBIERI:** Yes, please.  
22  
23 **MR. RINDONE:** We will finish up gray snapper in 2018, along with  
24 the MRIP calibration updates. Currently, we would be looking to  
25 do the research track pilot of scamp with the South Atlantic  
26 concurrently. The HMS Branch would assess king mackerel as a  
27 standard assessment, which we would want to track from the  
28 Gulf's current assessment capabilities, and there would also be  
29 additional funding that the Science Center has been able to  
30 procure that would help them be able to incorporate data from  
31 Mexico, which should add a significant amount of information to  
32 the assessment.  
33  
34 You guys talked last time about the gray triggerfish assessment  
35 and the best way to examine some of the information issues with  
36 that and try to do an update on the status of that particular  
37 species, and you guys had recommended doing it as an update, and  
38 so we have intended that to be in 2018, to begin sometime late  
39 summer, after the landings have been finalized. Then it should  
40 be available in December or January.  
41  
42 Then, moving on to 2019, we have update assessments for cobia  
43 and Spanish, and either an update or a standard assessment,  
44 whichever is most appropriate, for yellowedge grouper and  
45 tilefish, which were last assessed in 2011. Then the FWC would  
46 be conducting an assessment of spiny lobster at an appropriate -  
47 - Whether it be an update or a standard or a benchmark, whatever  
48 is the most appropriate way to do that.

1  
2 **CHAIRMAN BARBIERI:** Thank you, Ryan. Any additional questions  
3 or comments?  
4

5 **MS. BOSARGE:** I just wanted to mention, while we were talking  
6 about it, at the last council meeting, I did request that at  
7 some point in the future that the council would get a  
8 presentation specific to that gray triggerfish assessment and  
9 maybe what some of those data limitations were or issues,  
10 because I -- Maybe I am overly optimistic, but sometimes I think  
11 that we may have a good amount of data, but sometimes, with the  
12 right input from fishermen, we may use that data a little  
13 differently and input it differently or view it differently,  
14 and, therefore, input it into the model a little differently.  
15

16 I really had hoped to have a presentation on that during the  
17 Reef Fish Committee at the council meeting, when we have most of  
18 those fishermen there. They all tend to attend that committee  
19 meeting, and it's not to say that it would solve all of our  
20 problems, but it seems to me that in 2006 that we had certain  
21 data issues that we carried through to the following assessment.  
22 If we don't ever work towards resolving some of those -- I just  
23 thought maybe -- You never know. We may hear something that  
24 peaks our interest that could be useful to this group, and so I  
25 would like to see that at some point in the future. I don't  
26 know who will present it, but I'm sure you all will have some  
27 input on it.  
28

29 **CHAIRMAN BARBIERI:** Somehow I guessed that you would be raising  
30 your hand, Jeff. Thank you for that.  
31

32 **DR. ISELY:** I'm pretty sure I'll be the one presenting it.  
33 That's the issue, again. This is tentative, and there's a lot  
34 of discussions about where gray trigger are going to be, and so  
35 we won't know until this is finalized after the SEDAR Steering  
36 Committee, but, to your point, one of the major issues was the  
37 lack of larval fish from the SEAMAP tows. That is being  
38 addressed, and we expect to have data through whatever our  
39 current assessment year will be by the time we do another  
40 assessment. We don't have it yet, but it's been promised that  
41 it's on the way, and so that answers one of your questions.  
42

43 The other question, with regard to the fishermen, is that  
44 there's not a disconnect, but an offset between the data we use  
45 and the data they see. When we do an assessment in 2014, our  
46 terminal year is 2012, and they're looking at what is going on  
47 in 2014. We're always going to be a year to two years behind  
48 what the fishermen are seeing.

1  
2 If they see a big pulse in recruitment, it's not in our data,  
3 because we're two years behind, and I agree that what they see  
4 is what they see, and we would love to include it, but that  
5 would be the only thing we would include in the model for that  
6 time period, because we have no other data available yet, and so  
7 it's difficult to incorporate those sorts of things, and we hear  
8 it all the time, that they're so thick we can walk across them.

9  
10 As a scientist, I want to know, are they baby steps or are they  
11 big steps or how many steps can you take before you fall in the  
12 water. I mean, I need something more than just we can walk  
13 across them, because I can't put that in an assessment model.

14  
15 Like we talked about with goliath, everyone's perception of  
16 what's going on right where they live is not necessarily what's  
17 going on in the entire environment, and so we've thrown out the  
18 goliath grouper assessment because a lot of the CPUE indices  
19 were based on very limited areas, geographic ranges, and were  
20 not necessarily representative of the entire range of the fish,  
21 and so those are the kind of things that we struggle with with  
22 gray trigger, but, yes, I am more than happy to do more  
23 assessment work, and we're collecting the data, and I think  
24 we'll have a lot of the problems solved when the next assessment  
25 occurs, but it's just a matter of priorities along with other  
26 species.

27  
28 **CHAIRMAN BARBIERI:** A follow-up?

29  
30 **MS. BOSARGE:** Yes, and I definitely agree and completely  
31 understand. What they see on the water is not going to be  
32 representative of what we may see in the data. There are some  
33 lags there, but I meant more general comments that the fishermen  
34 may have.

35  
36 For example, and I forget which assessment it was that you were  
37 talking about at your last meeting, but gray trigger may be  
38 another where if most of your landings are coming from one  
39 region of the Gulf and if -- I haven't dug into your gray  
40 trigger assessment really, but if one of your indices is  
41 bycatch, shrimp trawl bycatch, you have data, pretty good data,  
42 for shrimp trawl bycatch across the Gulf of Mexico, but it may  
43 not be representative, unless you focus your -- If you focus  
44 your efforts on the more eastern Gulf bycatch, which would be,  
45 from a fishermen's standpoint, your pink shrimp fishery, and I  
46 guess it's things like that may reduce certain uncertainties  
47 that you may have in the inputs that are going into the model,  
48 but just little comments like that that may be beneficial. That

1 was where I was going, more so than what they're seeing on the  
2 water right now, but more general comments that we may get.

3  
4 **CHAIRMAN BARBIERI:** If I understand what you mean, Leann, I  
5 think this would be helpful as a general presentation to the  
6 council and the public, perhaps as a way to engage more people  
7 in being more participatory, industry-wise, in the SEDAR  
8 process.

9  
10 Coming to the meetings and providing a lot of the data -- In  
11 sometimes even the assessment workshops, it's so helpful to have  
12 some of these comments that help us interpret what some of those  
13 data are, and so I could see that being helpful.

14  
15 Oftentimes, I am approached by folks who say, my gosh, this  
16 didn't agree with what -- I'm like, well, why didn't you go to  
17 the workshop and make this point, because now it's too late, and  
18 I think it helps to make that point and keep people interested  
19 in coming and contributing and helping interpret.

20  
21 **DR. CALAY:** We will have to recall these conversations when gray  
22 triggerfish next gets put on the schedule, because, if it is an  
23 update, then we can't really entertain these changes. If it is  
24 a standard assessment, these changes need to be defined through  
25 the terms of reference.

26  
27 If it's a benchmark or a research track, then we have a data  
28 workshop where these sorts of questions can be brought to the  
29 table, but one of the difficulties Jeff alluded to that we have  
30 as we scope these assessments is that a lot of our initial  
31 decisions occur at the data scoping phone call, and if research  
32 collaborators are not aware of it or do not participate, then  
33 the assessment has already begun before we hear about potential  
34 changes in model structure. We do need to, as we put the next  
35 gray triggerfish assessment on the schedule, we need to find a  
36 better way to identify research collaborators and bring them  
37 into the process early. That's all I have to say.

38  
39 **DR. ISELY:** Also, on the list there, it's specified as an update  
40 and not a standard or a benchmark, and so I can't change the  
41 structure of the model. I can't change the data inputs. It  
42 will continue to be exactly as it was the last assessment,  
43 unless that "U" is changed to some other letter.

44  
45 **CHAIRMAN BARBIERI:** Ryan, I believe your actual presentation of  
46 the schedule is completed, and so any additional questions or  
47 comments? Dr. Simmons.

48

1 **DR. SIMMONS:** Thank you, Mr. Chairman. My understanding from  
2 Ryan, and I think it was from Doug, and he called me earlier, is  
3 the Steering Committee is considering a pretty large change, I  
4 guess, with gray snapper, which would be moving it to the first  
5 research cycle, and I believe he would like us to try to get  
6 some feedback from you all on that, and then maybe we could  
7 report back tomorrow morning to the Steering Committee, if  
8 that's something we could do here quickly this afternoon,  
9 because I think that would be quite a change.

10  
11 Originally, I think it was the scamp that we were supposed to do  
12 as a research cycle, the first one, and so I don't know if Ryan  
13 has any more information on that or if you want him to take  
14 anything back to the Steering Committee regarding that.

15  
16 **CHAIRMAN BARBIERI:** I think this was specifically what John  
17 Mareska had asked. I mean if we could get some update tomorrow  
18 from the committee, the Steering Committee, on whether they  
19 decide to go forward with this.

20  
21 **DR. SIMMONS:** Yes, and what I'm asking is, before they make that  
22 decision, do you have any concerns or pluses or minuses or agree  
23 or disagree? I heard that John thought that it was a good idea,  
24 I thought, to go forward as a research cycle, but I wasn't sure  
25 I heard the committee say that.

26  
27 **CHAIRMAN BARBIERI:** Will.

28  
29 **DR. PATTERSON:** Perhaps you can refresh our memories about the  
30 difference between a benchmark and a research track.

31  
32 **DR. CALAY:** In a nutshell, a research track assessment would not  
33 be required to use the absolute most up-to-date data inputs. We  
34 could use data inputs that were as close as possible to  
35 finalized inputs, but the bigger point is that we would not, in  
36 the terms of reference, produce management advice from a  
37 research track assessment. We would essentially determine the  
38 most defensible model structure to use.

39  
40 Then our recommendation, once we determine what the most  
41 appropriate model structure to use is, is to turn around and do  
42 an operational assessment that would lead to management advice  
43 very quickly thereafter. Hopefully the advantage is it speeds  
44 up our data provision, because it relieves the data providers  
45 with the need to be quite so careful with their QA/QC, and it  
46 helps us determine appropriate model structures, which we ought  
47 to be doing for every assessment, but, frankly, don't always  
48 have the time.



1  
2 **CHAIRMAN BARBIERI:** John.  
3  
4 **DR. MARESKA:** Shannon, just to reinforce what you said, the  
5 research track doesn't have the timeline that a standard or a  
6 benchmark has, where once you've done so much that's it and you  
7 have to go forward.  
8  
9 **DR. CALAY:** Right.  
10  
11 **CHAIRMAN BARBIERI:** Do you have a question, Jack?  
12  
13 **DR. ISAACS:** Just a question for Shannon. How do you know when  
14 the model structure is complete? What is the process for ending  
15 that?  
16  
17 **DR. CALAY:** What we imagine is that -- We know essentially what  
18 our data inputs are, but sometimes we have the choice of doing a  
19 length-based assessment with age/length keys or a full-out age-  
20 structured assessment. In a research track, we would actually  
21 take the time to investigate the robustness of the model results  
22 on those choices, and we have some opportunity to look at our  
23 scientific uncertainty in each one of those model components and  
24 try to find the most robust structure for the model.  
25  
26 It's something that we would have to examine through management  
27 strategy evaluation, and we don't typically, or ever, in fact --  
28 We have not done that in the context of a data-rich assessment  
29 at this time, and so we often find ourselves, in the SEDAR  
30 environment, either with a drop-dead deadline that we have to  
31 move forward, and so questions we had about model structures  
32 cannot be addressed in that timeframe, or we find important  
33 structural concerns that can't be addressed in that model  
34 timeframe, and this research track really gives us an  
35 opportunity to make those decisions without the drop-dead  
36 deadline of having to provide management advice.  
37  
38 **CHAIRMAN BARBIERI:** Will.  
39  
40 **DR. PATTERSON:** It seems to me that either gray snapper or scamp  
41 would be odd choices for the first research track assessment,  
42 given that, for both of them, there are some questions about  
43 data availability and comprehensiveness of information, and so  
44 that's the only thing that really strikes me as curious about  
45 either of those.  
46  
47 **DR. CALAY:** In all honesty, it would have been my preference to  
48 do research track first with a stock assessment that is well

1 known, but that's not the consensus of the Science Center. The  
2 consensus is to do this with new species, initially, and so one  
3 of the concerns we have about gray snapper is the provision of  
4 data from our state partners, because, right now, it appears  
5 that many partners are collecting data that later needs to be  
6 merged into a single dataset, and the actual data collection is  
7 quite different, the data structures we're getting are quite  
8 different, and there are duplications occurring.

9  
10 It's just a matter of getting our datasets into final formats  
11 that's becoming a bottleneck, and so the research track for gray  
12 is partly because of the increased influence of the state data  
13 on that assessment and the increased need to QA/QC that merged,  
14 combined information, and also we suspect that there is already  
15 a perception about the stock status of gray snapper, and we  
16 would want to -- We don't want to find ourselves in a position  
17 where, due to an inadequate project schedule and an inadequate  
18 understanding of our data, being in a position where a stock  
19 might be declared overfished, when, in fact, that's not a  
20 logical conclusion.

21  
22 We think a research track would be very helpful, given the fact  
23 that this is thought to be a very widespread and resilient  
24 stock, and it would be somewhat surprising if this stock was  
25 overfished, and so we really want to be certain that we have an  
26 appropriate model structure and data inputs in place before we  
27 conduct a benchmark assessment.

28  
29 **CHAIRMAN BARBIERI:** Thank you, Shannon. That helped a lot, and  
30 so any concerns from the committee? Carrie, if I heard you  
31 correctly, the latest news, so to speak, from the SEDAR Steering  
32 Committee is that they would be considering tomorrow switching  
33 the research track pilot from scamp in 2018 to gray snapper next  
34 year.

35  
36 **DR. SIMMONS:** I believe so, but if Ryan is still on the phone,  
37 he might be better able to answer, because he is actually there  
38 at the meeting, if I may.

39  
40 **CHAIRMAN BARBIERI:** Ryan, can you weigh in?

41  
42 **MR. RINDONE:** Sure. I just wanted to get an idea from you guys  
43 on what your thoughts are on the issue. Are you comfortable  
44 with moving the timeline up for trying out the research track  
45 and doing a hybrid approach, where the frontend of the  
46 assessment would be more benchmark-esque, if you will, but then,  
47 at the end, it would be very similar to how the research track  
48 review is supposed to be done, where --

1  
2 (A portion Mr. Rindone's comment is not clear on the audio  
3 recording.)  
4

5 Then following that up later on with a review by the SSC that  
6 would include things like stock status determination.  
7

8 **DR. SIMMONS:** Ryan, are you guys going to make a decision? Is  
9 the Steering Committee going to make a decision tomorrow on  
10 these changes? That's what we're asking.  
11

12 **MR. RINDONE:** The idea is that they would, yes.  
13

14 **CHAIRMAN BARBIERI:** Right, and so any concerns from the  
15 committee, given all the points that have been made regarding  
16 gray snapper data availability and timelines and all of that?  
17 Any concern from the committee? I am not seeing anybody  
18 nodding, nodding off perhaps, but -- I guess basically the  
19 committee does not express, at this point, any concerns with  
20 that recommendation if that goes forward.  
21

22 Any other questions or comments for Ryan before we recess for  
23 the day? Seeing none, the meeting is recessed, and a reminder  
24 that we're going to start tomorrow at 8:30. I would really  
25 appreciate if folks could get here at least fifteen minutes  
26 ahead of time, so we can get going at 8:30 promptly. Steven.  
27

28 **MR. ATRAN:** Just for your information, later on tonight, as soon  
29 as I get back to my office, I do have two items that I am going  
30 to be uploading to the servers from Shannon dealing with the ABC  
31 control rules and also a presentation from Morgan Kilgour that  
32 goes with the Shrimp SSC session tomorrow morning, and so I will  
33 be getting those uploaded to the file servers very shortly.  
34

35 **CHAIRMAN BARBIERI:** Thank you, and I will see everybody tomorrow  
36 morning.  
37

38 (Whereupon, the meeting recessed on September 20, 2016.)  
39

40 - - -

41  
42 September 21, 2016

43  
44 WEDNESDAY MORNING SESSION

45  
46 - - -

47  
48 The Standing, Reef Fish, Socioeconomic, Shrimp, and Spiny

1 Lobster Scientific and Statistical Committees of the Gulf of  
2 Mexico Fishery Management Council reconvened in Tampa, Florida,  
3 Wednesday morning, September 21, 2016, and was called to order  
4 at 8:30 a.m. by Chairman Luiz Barbieri.  
5

6 **CHAIRMAN BARBIERI:** Good morning, everybody. We are ready to  
7 get started this morning, but, before we get started, I have a  
8 few reminders. First of all, for folks who are on the phone or  
9 on the webinar, please remember to mute yourself whenever you  
10 are not talking, whenever you are not giving a presentation or  
11 asking questions, because what happens is, otherwise, we get  
12 that dreaded echo chamber thing that we got yesterday.  
13

14 Another thing is there are sign-up sheets that are going around.  
15 I actually don't remember signing this yesterday. Somebody did  
16 it for me. Thank you, Charlotte, but this is going to be going  
17 around again today, and so remember to do that. Then, during  
18 the break, instead of starting right now, I will make an  
19 announcement regarding lunch. With that, we are ready to get  
20 started.  
21

22 Since we have a number of folks here today who were not here  
23 yesterday, I think it would be a good idea for us to go around  
24 the room again with our introductions, starting with Lee  
25 Anderson right there.  
26

27 **DR. ANDERSON:** Lee Anderson, SSC.  
28

29 **DR. ISAACS:** Jack Isaacs, Louisiana Department of Wildlife and  
30 Fisheries.  
31

32 **DR. ELLIS:** Robert Ellis, Reef Fish SSC.  
33

34 **DR. ISELY:** Jeff Isely, Standing SSC.  
35

36 **DR. S. POWERS:** Sean Powers, Standing SSC.  
37

38 **DR. ROBERTS:** Ken Roberts, Standing SSC.  
39

40 **DR. KEITHLY:** Walter Keithly, Standing SSC.  
41

42 **MR. ATRAN:** Steven Atran, Gulf Council staff.  
43

44 **CHAIRMAN BARBIERI:** Luiz Barbieri, Standing SSC.  
45

46 **DR. J. POWERS:** Joe Powers, Standing SSC.  
47

48 **MR. MATENS:** Camp Matens, Gulf Council.

1  
2 **MS. BOSARGE:** Leann Bosarge, Gulf Council.  
3  
4 **DR. PATTERSON:** Will Patterson, SSC.  
5  
6 **MR. GILL:** Bob Gill, Standing SSC.  
7  
8 **DR. BLOUNT:** Ben Blount, Standing SSC.  
9  
10 **DR. ADRIANCE:** Jason Adriance, Special Reef Fish SSC.  
11  
12 **DR. MARESKA:** John Mareska, Reef Fish SSC.  
13  
14 **DR. TOLAN:** Jim Tolan, Standing SSC.  
15  
16 **DR. HERBIG:** Jenny Herbig, Reef Fish SSC.  
17  
18 **DR. LORENZEN:** Kai Lorenzen, Standing SSC.  
19  
20 **DR. MICKLE:** Paul Mickle, Standing SSC.  
21  
22 **CHAIRMAN BARBIERI:** Then way in the back there, on the left  
23 side, behind the column.  
24  
25 **MS. MICHELLE MASI:** Michelle Masi, Florida Fish and Wildlife.  
26  
27 **MS. ALLEN:** Shanae Allen, FWC.  
28  
29 **DR. LARKIN:** Mike Larkin, Southeast Regional Office, NOAA.  
30  
31 **DR. CALAY:** Shannon Calay, Southeast Fisheries Science Center.  
32  
33 **DR. FARMER:** Nick Farmer, Southeast Regional Office.  
34  
35 **DR. KILGOUR:** Morgan Kilgour, Gulf Council staff.  
36  
37 **MR. HANSON:** Chad Hanson, the Pew Charitable Trusts.  
38  
39 **MR. MALINOWSKI:** Rich Malinowski, Southeast Regional Office.  
40  
41 **MR. PETER HOOD:** Peter Hood, SERO.  
42  
43 **MS. GERHART:** Susan Gerhart, Southeast Regional Office.  
44  
45 **MR. RYAN GANDY:** Ryan Gandy, Shrimp SSC.  
46  
47 **MR. RICHARD BURRIS:** Rick Burris, Shrimp SSC.  
48

1 **MR. JEFFREY MARX:** Jeff Marx, Shrimp SSC.

2  
3 **CHAIRMAN BARBIERI:** Last, but definitely not least.

4  
5 **DR. DRYMON:** Marcus Drymon, Reef Fish SSC.

6  
7 **DR. NANCE:** Jim Nance, Shrimp SSC.

8  
9 **DR. CHRISTMAN:** Mary Christman, Standing SSC.

10  
11 **DR. SHIPP:** Bob Shipp, Standing SSC.

12  
13 **CHAIRMAN BARBIERI:** We just saw an email from Steven Scyphers,  
14 and so he is here.

15  
16 **MS. CHARLOTTE SCHIAFFO:** I think that's everybody, except for  
17 some of the presenters, but all of the SSC folks that are here  
18 have chimed in.

19  
20 **APPROVAL OF MINUTES**

21  
22 **CHAIRMAN BARBIERI:** Thank you for that, Charlotte. Before we  
23 get started with our first agenda item for today, we need to  
24 complete, and Joe was reminding me here that yesterday we  
25 skipped approval of the meeting minutes that involved Shrimp SSC  
26 members, since they were not present here yesterday, and so we  
27 have two meeting minutes that need to be approved. One is for  
28 the June 1, 2016 and then another one is the verbatim meeting  
29 minutes for the same meeting, I believe, and it says June 2016  
30 verbatim minutes.

31  
32 **MR. ATRAN:** They are the same meeting, but it's 3(b) and 3(c),  
33 which is the June 2016 Standing, Shrimp, and Socioeconomic SSC.  
34 There are two versions of them.

35  
36 **CHAIRMAN BARBIERI:** Okay. There are two versions of them, and  
37 we need to get both approved. Do I have any comments or  
38 questions regarding those meeting minutes? Seeing none, let me  
39 ask the members of the SSC that are on the webinar. Are there  
40 any comments or questions or corrections for the meeting  
41 minutes? Seeing none, those meeting minutes are approved.

42  
43 That leads us into our first agenda item today, which is  
44 convening the Standing and the Shrimp SSC members and Agenda  
45 Item Number VIII, Risk Assessment for Threshold Permit Numbers  
46 Relative to Sea Turtle Incidental Take Constraints, and I  
47 believe we're going to have Rick Hart give the presentation, and  
48 Mike Travis as well.

1  
2 **RISK ASSESSMENT FOR THRESHOLD PERMIT NUMBERS RELATIVE TO SEA**  
3 **TURTLE INCIDENTAL TAKE CONSTRAINTS**  
4

5 **DR. RICK HART:** This is Rick Hart from the Southeast Fisheries  
6 Science Center at the Galveston Laboratory. I will be doing  
7 most of the presentation. Dr. Mike Travis is also on the line  
8 and available for questions as well. He had a large role in  
9 writing this document and the analysis, which was put together  
10 by myself, Mike Travis, and Dr. Christopher Liese from the Miami  
11 Lab. This was sent out from the Science Center Director on  
12 August 31 to the SSC Chair.  
13

14 Today, I am just going to present an overview of the memo that  
15 was sent out and a brief analysis that we did. On July 14, the  
16 Gulf Council requested an analysis of the Gulf of Mexico shrimp  
17 fishery data to determine the probability of exceeding the total  
18 effort threshold associated with sea turtles under each of the  
19 alternatives in Amendment 17B, Action 3.  
20

21 The comparisons would be the number of federally-permitted  
22 vessels versus total shrimp fishing effort. They also stated  
23 that, if a quantitative analysis is impossible, that we would do  
24 at least a qualitative assessment of the relative risk of  
25 exceeding the sea turtle-related effort threshold for each of  
26 the alternatives.  
27

28 After we sent the memo, we got some feedback about the areas  
29 that we were looking at, and so I want to really quickly go over  
30 what the different shrimp effort areas are that we look at when  
31 we're doing these types of analysis. For the purposes of the  
32 Gulf shrimp fishery's effort estimation, the COLREGS line refers  
33 to the political line across the the harbor mouths and the  
34 inlets for navigation purposes.  
35

36 The Gulf shrimp fishery operates within the inshore area, which  
37 is defined as the area from the COLREGS line shoreward, and the  
38 offshore area, which is designated as being from the COLREGS  
39 line seaward, and so total effort is a combination of both  
40 inshore effort and offshore effort, and these boundaries are not  
41 the same as state and federal waters, and we heard that there  
42 was some confusion of the difference between inshore and  
43 offshore and state and federal. Inshore area and offshore area  
44 and state and federal waters are different animals. They are  
45 not the same. For this analysis, we focused on the inshore and  
46 offshore areas and not state and federal waters.  
47

48 If you look at these lines, the inner line is the COLREGS line,

1 which shows the break between inshore and offshore, and the  
2 outer line is the state and the federal boundary, and so you can  
3 see the difference there showing the nine and three-mile limit.

4  
5 We first attempted to do a quantitative analysis, and we  
6 realized that it's not possible, given the data that we have.  
7 For one thing, we found there is no statistical relationship  
8 between the number of federally-permitted vessels and total  
9 effort. You can see that regression.

10  
11 Even if a relationship did exist, we wouldn't really be able to  
12 reasonably predict expected total effort in the fishery, because  
13 future developments in the fishery are highly uncertain, and  
14 most importantly changes in shrimp prices and fuel prices. That  
15 really drives effort levels.

16  
17 Lack of a relationship between total effort and the number of  
18 federally-permitted vessels was expected, because, for one, the  
19 number of federal permits does not limit the number of vessels  
20 participating or the amount of effort in the inshore fishery,  
21 and many federally-permitted vessels are not active in any given  
22 year, and only active vessels generate effort.

23  
24 Previous analyses examined relationships between offshore effort  
25 and various measures of active vessels, for example, a strong  
26 positive correlation between the number of federally-permitted  
27 vessels active in offshore waters and offshore effort.

28  
29 Here's a little bit of background information as well. The  
30 permit moratorium was introduced in March of 2007, and so we  
31 analyzed data from 2008 to 2014. In order to relate total  
32 effort to federal permits, it was necessary to link offshore  
33 effort to all vessels active in offshore waters and establish  
34 the fraction of these active vessels that have federal permits.  
35 We also considered latent federally-permitted vessels in our  
36 assessment, those vessels that didn't have landings or effort.

37  
38 The turtle-related effort threshold has been set at  
39 approximately 133,000 nominal days of fishing, which is that  
40 level of effort in 2009 that you saw. Nominal days fishing is  
41 just days fished, which is equal to twenty-four hours of tow  
42 time. Between 2008 and 2014, the effort in inshore waters  
43 ranged from 35.6 to 56.4 thousand days fished, with an average  
44 of 46.09 thousand days fished. The effort in inshore waters  
45 ranged from 60.5 to 76.5 thousand days fished, with an average  
46 of 67.9 thousand says fished.

47  
48 Since we really couldn't conduct a quantitative analysis, we



1 fulfilled the request of doing a qualitative analysis, and we  
2 looked at three different scenarios. The first one was the  
3 average effort scenario from 2008 to 2014.

4  
5 The inshore and offshore fishery generated an average annual  
6 effort of 114.8 thousand days fished during that time. This was  
7 approximately 18.2 thousand days below the 2009 turtle-related  
8 effort threshold. The average number of active vessels and the  
9 active permitted vessels were 1,657 and 1010, respectively, and  
10 so, given the mean annual offshore effort of 67.9 thousand days  
11 fished, this came out to be an average annual offshore effort  
12 was forty-one days per active offshore vessel during that time.

13  
14 You would need to have an additional 445 average offshore  
15 vessels that would need to become active in order to exceed the  
16 effort threshold, using those average numbers, and so it would  
17 appear that any federal permit level above 1,455 could,  
18 mathematically, lead to the effort threshold being exceeded,  
19 with all else being equal, fuel prices, shrimp prices, et  
20 cetera.

21  
22 The other scenario we looked at was the the conditions in 2009,  
23 where we had 133,000 days fished during this year for total  
24 effort, both inshore and offshore. At that time, there were  
25 1,891 vessels that were active in the offshore waters. That's  
26 the highest number of active vessels in the offshore fishery  
27 during the 2008 to 2014 time period. Of those vessels, 1,075  
28 had a permit and could legally harvest shrimp in the EEZ.

29  
30 That leads to the conclusion that any federal permit level above  
31 1,075 could theoretically lead to the threshold being exceeded  
32 if economic and biological conditions that are similar to that  
33 year are experienced in the future, and so we believe it's  
34 moderately likely the threshold could be exceeded at a permit  
35 level at or near 1,075 permits, close to the 1,074 permits which  
36 is listed under Alternative 2 in the amendment.

37  
38 The last scenario we looked at was the most recent year that we  
39 have complete effort data at the time of the analysis. Total  
40 effort equals 109.3 thousand days fished during this year. 35.6  
41 thousand days fished was in the inshore waters and 73.7 thousand  
42 days from offshore.

43  
44 At that time, in 2014, the number of active vessels in the  
45 offshore fleet was 1,616, of which 987 of those active vessels  
46 had a federal permit. The average offshore vessel generated  
47 forty-six days fished in 2014, and so it would take an  
48 additional 516 average offshore vessels entering the fishery to

1 exceed the threshold.

2  
3 Given those numbers, any federal permit number greater than  
4 1,503 could exceed the threshold, and it is likely that these  
5 recent economic conditions will be experienced again in the  
6 future and these average effort levels would be also  
7 experienced, and so it's pretty high likelihood of exceeding the  
8 sea turtle-related effort threshold with any federal permit  
9 level over 1,503.

10  
11 We looked at all the alternatives in Action 3 in Amendment 17B,  
12 and we assigned a relative risk of exceeding the sea turtle-  
13 related effort threshold, and so I don't need to read through  
14 all of the alternatives and the number of permits, but you can  
15 look at that and get a general idea of the relative risk of  
16 exceeding the effort threshold under these various scenarios.  
17 It's intuitive that like 6a, with 1,500, is a higher risk of  
18 exceeding the effort threshold than Alternative 4, with 882  
19 permits.

20  
21 One thing to keep in mind is that these really were back-of-the-  
22 envelope calculations, just intended to illustrate the general  
23 implications of various permit level decisions. To that end,  
24 there are multiple caveats, one of which is latent effort. Not  
25 all latent effort can be realized. There are vessels out there  
26 that hold moratorium permits, and they use them for non-  
27 shrimping reasons, and accounting for these unused permits would  
28 increase the number of permits the fishery can support without  
29 exceeding the sea turtle-related effort threshold.

30  
31 It's my understanding that there are vessels out there that have  
32 shrimp permits that may not shrimp, but they need a permit to do  
33 various trawling activities for oil companies or things like  
34 that, in case they get incidental catch.

35  
36 Another caveat that to be considered to that end is biological  
37 and economic conditions. If economic and biological conditions  
38 improve, like we saw a couple of years ago, shrimping becomes  
39 more profitable, and some of those latent federally-permitted  
40 and state-licensed vessels become active, and vessels that are  
41 already active increase their effort, and so accounting for  
42 these relationships would suggest that the number of permits  
43 allowed would need to be lower, to avoid exceeding that effort  
44 threshold.

45  
46 Predicting and partitioning effort data, measuring, let alone  
47 predicting, effort partitioned especially into state and federal  
48 waters is difficult, because the fishery is conducted in state-

1 managed inshore and offshore waters and federally-managed office  
2 waters, i.e., the EEZ.

3  
4 The permits only limit potential effort in the EEZ, and they  
5 don't limit effort. They only limit the number of permits, and  
6 so the amount of effort expended by each vessel or the amount of  
7 total effort really isn't regulated in the fishery, with the  
8 exception of certain areas, but due to red snapper mortality,  
9 based on bycatch.

10  
11 Really, that's it, in a nutshell. Mike and I are both available  
12 for any questions that you may have about this, and I thank you  
13 for your time and the opportunity to present this analysis.  
14 With that, Mr. Chairman, I thank you, and I'm available for  
15 questions.

16  
17 **CHAIRMAN BARBIERI:** Thank you so much for the presentation,  
18 Rick. Before I open it up for questions, I am going to go  
19 through the SSC action items for this agenda item. The SSC is  
20 asked to review the analysis provided by the Southeast Fisheries  
21 Science Center and determine if it addresses the council's  
22 request and is the best scientific information available. The  
23 SSC may also comment if it has guidance regarding the Amendment  
24 17B alternatives for a threshold number of Gulf shrimp vessel  
25 permits. With that, you have our charge for discussion and for  
26 completion of our report, and I am going to open the floor for  
27 questions to Rick and/or comments and discussion points.

28  
29 **DR. HART:** Crickets. That's a good sign that I covered  
30 everything well then, I think.

31  
32 **CHAIRMAN BARBIERI:** Yes, that should be kudos for you, Rick,  
33 that it was so clear. Folks are still digesting all of that  
34 information and getting ready. We have a question from Will  
35 Patterson.

36  
37 **DR. PATTERSON:** The last part of what you just read us has to do  
38 with the amendment. Can we get Morgan to bring us up to speed  
39 on what that actual entails?

40  
41 **CHAIRMAN BARBIERI:** Sure. Good idea. Dr. Kilgour.

42  
43 **DR. MORGAN KILGOUR:** Not a problem. One thing is Mike Travis,  
44 who coauthored this with Rick, is apparently wanting to say  
45 something, to give a little bit of clarification, and then I  
46 will address Will's question.

47  
48 **DR. MIKE TRAVIS:** (Dr. Travis was unable to communicate over the

1 webinar.)

2  
3 **CHAIRMAN BARBIERI:** Mike, if you could, perhaps just send an  
4 email to either Morgan or to Charlotte with the points you want  
5 to make, just in the interest of time. We have a pretty full  
6 agenda today, and we want to keep moving forward with this, and  
7 so if Morgan can go over Amendment 17B, the Shrimp FMP, and the  
8 question that Will asked, and then we're going to get to Mike's  
9 comments by email.

10  
11 **DR. KILGOUR:** That sounds like a plan. Really, this risk  
12 assessment is specifically for Action 3 in Amendment 17B.  
13 You've seen it before, and you will probably see it again. I  
14 hope not, but that's just the nature of this particular  
15 document, but, in it, there's a threshold number of permits that  
16 may trigger a permit pool for the shrimp fishery. Once we hit  
17 this threshold, then a permit pool could be created, and that's  
18 where the risk assessment was necessary.

19  
20 Action 3 is on page 19. Alternative 1 is there is no threshold  
21 number of permits. Alternative 2 is based on the optimum yield  
22 that is in a previous action, which also coincides with a turtle  
23 threshold, and so it would be 1,074 permits, roughly. That  
24 changes with the incorporation of new data, and so that number  
25 is not static.

26  
27 Alternative 3 sets a threshold based on the active number of  
28 permits during 2011, when the effort was highest during the  
29 moratorium in the area monitored for red snapper. Alternative 4  
30 sets it at the number of active permitted vessels during 2008,  
31 when catch per unit effort in the offshore fishery was highest  
32 during the moratorium.

33  
34 Alternative 5 sets the threshold based on the active permitted  
35 vessels with the highest catch per unit effort offset with  
36 optimum yield and without substantially reducing landings, and  
37 so it's taking a couple of factors into consideration, but the  
38 main one the risk assessment really addresses is this  
39 Alternative 6, which would set the threshold number higher than  
40 it is currently, or just below what it is currently, which is  
41 based on the number of permits and not the number of active  
42 permits.

43  
44 6a would be at the end of 2013, which is 1,501 permits. 6b is  
45 at the end of 2014, which is 1,470 permits. Option 6c would be  
46 at the end of the moratorium, which will be in a little over a  
47 month, and so we don't know what that number is, but it's my  
48 understanding that it's 1,440 right now, and so it's roughly in

1 that area, and so we're losing about fifteen permits per year,  
2 but, with the risk assessment that Rick and Mike just did, does  
3 the SSC feel confident that setting any of these values would  
4 not put the turtle fishery or the shrimp fishery in jeopardy of  
5 being closed, based on all of the constraints on the shrimp  
6 fishery?

7  
8 **CHAIRMAN BARBIERI:** Thank you for that, Morgan. That really  
9 helped clarify things. Sean, do you have a question?

10  
11 **DR. S. POWERS:** Can you go back to the table in the  
12 presentation? With that in mind, you said that the current  
13 number of permits is 1,440?

14  
15 **DR. KILGOUR:** Yes, and don't hold me to that. It's roughly  
16 1,440. I would have to go look and do some analysis.

17  
18 **DR. S. POWERS:** So 6a and 6b would be an increase in permits?

19  
20 **DR. KILGOUR:** Not an increase in permits. I'm sorry. I wasn't  
21 clear. This is setting a threshold. If the number of permits  
22 goes below this threshold, then the council may wish to open a  
23 permit pool, which would then increase the number of permits.  
24 The council hasn't decided what to do yet and whether or not to  
25 establish this permit pool.

26  
27 That's what 17B is all about, but if the threshold is higher  
28 than the current number of permits and the council decides to  
29 have a permit pool, then, yes, it would increase the number of  
30 permits, but that's if, if, if, if, if, and so the council has  
31 to take several different steps for that to happen.

32  
33 **DR. S. POWERS:** So a question for Rick, in that I'm trying to  
34 figure out how you assigned the high, low, and moderate to this.

35  
36 **DR. HART:** Maybe Mike can speak to this too, but it was based on  
37 really -- It was relatively based on that year that we had high  
38 effort in the fishery and the number of permits then.

39  
40 **DR. S. POWERS:** But, in that year, you didn't exceed it,  
41 correct? You can close, but you didn't exceed it.

42  
43 **DR. HART:** It's relative to one another, I guess, if I'm  
44 understanding your question correctly.

45  
46 **DR. S. POWERS:** I'm just trying to see how you have a high risk  
47 when you really know that you didn't exceed it in that year. A  
48 high risk would be that you would exceed it, and even your

1 scenario where you think that is the most likely to exceed it  
2 never did exceed it, and so I'm just trying to get a feel for  
3 what the word "high" is meaning here.

4  
5 **DR. HART:** Let me look at something here, Sean. I am trying to  
6 find the section where we had that written out, so I can quote  
7 it. I can't find what I'm looking for, Sean, but it was just  
8 based on the potential of reaching that level, based on the  
9 effort and the conditions during that time period. I can't find  
10 my quote.

11  
12 **CHAIRMAN BARBIERI:** Charlotte, if you could back up to the  
13 slides on Alternatives 6a, 6b, or 6c --

14  
15 **DR. HART:** It was based on the high-effort year and the number  
16 of permits that were in that time period, and so they're  
17 relative to each other and not really an absolute -- It's  
18 accounting for potential changes in the biological and economic  
19 conditions, and so it's not a high -- The risk of high, medium,  
20 and low are relative to one another and not necessarily to  
21 exceeding it, per se, but relative to one another of the  
22 scenarios, and so is having 1,500 permits a higher chance of  
23 exceeding the threshold than if you have 800 permits. Does that  
24 make sense?

25  
26 **CHAIRMAN BARBIERI:** Let's go back to that table, Slide 11.  
27 Morgan, did you have a clarification as well, or did Rick  
28 address it?

29  
30 **DR. KILGOUR:** I think Rick addressed it. What I just wanted to  
31 say is the threshold is based on 2009, and this number of active  
32 vessels is based on 2009, but the effort in the number of  
33 vessels, as Rick had stated, are not linear. They're not  
34 related, and so effort can change in any way, shape, or form,  
35 which is why the risk, and I think they put it as high, and it  
36 was because effort in that year didn't exceed it, but that  
37 number of vessels -- If effort increases, it would have a higher  
38 chance, especially since that was the cap that they put on the  
39 sea turtle threshold.

40  
41 **DR. HART:** Right. So for 6a, 6b, and 6c, it would have a higher  
42 relative risk of exceeding the effort threshold than say 5a, at  
43 1,133 permits. It's not necessarily that there is a high risk  
44 at 6a, but there is a higher risk in 6a relative to the other  
45 scenarios, given certain conditions.

46  
47 **CHAIRMAN BARBIERI:** Thank you, Rick. We have Will Patterson and  
48 then Dave Griffith.

1  
2 **DR. PATTERSON:** Part of my question was cleared up following  
3 Sean's, but, to me, this table really is high or neutral and  
4 lower and not high and low, in the way I see it, and so I'm  
5 curious in trying to kind of get a sense of advice that we could  
6 provide.

7  
8 If there is no linear relationship between effort and number of  
9 permits, it seems like, in recent history, you could go to the  
10 maximum annual effort scenario of 2009 and use that as sort of  
11 your upper bound, although I assume that effort could be even  
12 greater per boat or per permit than that year, but I am not sure  
13 this table actually gives us any information to provide guidance  
14 to the council.

15  
16 **CHAIRMAN BARBIERI:** David. I was waiting to see if Rick was  
17 going to have some response. We have David and then Lee.

18  
19 **DR. HART:** I guess I didn't know if that was a question or a  
20 comment.

21  
22 **CHAIRMAN BARBIERI:** I think it was a comment, Rick. David and  
23 then Lee Anderson.

24  
25 **DR. GRIFFITH:** Thank you, Mr. Chairman. I was just wondering --  
26 I know in the period from 2008 to 2014 that there was that big  
27 oil spill, and did that affect the average that you came up  
28 with? Then I was also wondering if you accounted for vessel  
29 size, or do all vessels have the same risk of catching turtles?  
30 Can you just address those questions?

31  
32 **DR. HART:** We did not account for vessel size, and the oil spill  
33 is in the data.

34  
35 **DR. GRIFFITH:** So did that oil spill -- Do you think that  
36 lowered the effort, the average effort?

37  
38 **DR. HART:** I would have to look at the numbers. It was lower,  
39 but, without pulling the numbers, I can't say exactly how -- I  
40 don't want to say how much lower or different it was from the  
41 other years. I don't have that right now, but I can get that  
42 for you.

43  
44 **CHAIRMAN BARBIERI:** We have Lee and then Jack.

45  
46 **DR. ANDERSON:** I think these guys did a good job on a very  
47 difficult thing, because there is no relationship at all on  
48 this, and I think we would kind of almost giving too much

1 credence to it if we go to the council and say this number is  
2 going to be safe. The important thing, I think, were in the  
3 caveats. If the market is good, you're going to have trouble no  
4 matter what the deal is, and so you almost go back and say to  
5 the council that you asked an incomplete question.

6  
7 We can give you these numbers, that that 1,450 is bad, but the  
8 real problem will be the economics. If the market is good or  
9 the biology is good, you're going to be in trouble, and I think  
10 that should be part of the report and not just a caveat, but I  
11 think that's the more important thing.

12  
13 **CHAIRMAN BARBIERI:** Did you have a comment, Will?

14  
15 **DR. PATTERSON:** No, I just had a question.

16  
17 **CHAIRMAN BARBIERI:** Okay, because I was hoping that Leann would  
18 hear what Lee just said. Can you repeat that again, Lee, just  
19 real quickly?

20  
21 **DR. ANDERSON:** The bottom line is I think the economic  
22 conditions are just as important, if even more so, than the  
23 numbers. If there are no boats, then you're not going to do it,  
24 but there would be a very wide range of numbers that could cause  
25 problems if the economic conditions are right.

26  
27 **DR. HART:** I agree with that, and that's where the latent effort  
28 issue comes in. There are a lot of vessels out there that are  
29 not fishing, or not fishing a lot, and, when economic conditions  
30 improve, they go into the fishery. I have kind of said that for  
31 quite a while, that there's a lot of boats out there that  
32 weren't fishing, and we saw that a couple of years ago when  
33 effort went up, and it was close to ticking the mark for the ten  
34 to thirty-fathom zone for the red snapper, and so that is a  
35 valid point, and that really was one of the main caveats, was  
36 that latent effort issue, and that was meant to address these  
37 comments, really. His comments are correct, in that.

38  
39 **CHAIRMAN BARBIERI:** Thank you, Rick. Let me open it up for Jim  
40 Nance, who had another comment or a clarification, and then we  
41 will go to Jack and then Paul.

42  
43 **DR. NANCE:** Thank you, Mr. Chairman. Lee, you hit it spot-on.  
44 The caveats are the most important thing here. As Rick has  
45 pointed out, there is not a relationship between number of  
46 permits and the total number of effort. What they did, from a  
47 qualitative standpoint, is trying to give the council a little  
48 bit of background of what could happen.



1  
2 A good example is in 2009, and that's when the turtle cap was  
3 developed at 133,000 days fished. In 2012, while we had less  
4 permits, because we had a market that had higher shrimp prices  
5 and low fuel prices, we almost reached that cap with a fewer  
6 number of permitted vessels, and so that's what they were trying  
7 to tease out of this.

8  
9 The economic conditions really control how much effort is going  
10 to be expended by this fleet. If you have low fuel prices and  
11 real high shrimp prices, you have the potential to exceed this  
12 effort with quite a bit lower permits. If you have a few  
13 permits and you don't have very good shrimp prices, you are not  
14 going to exceed it, and so the caveats are the important thing  
15 here. I just wanted to make those comments.

16  
17 **CHAIRMAN BARBIERI:** Thank you for that, Jim. That helped a lot.  
18 I have Jack and then Paul.

19  
20 **DR. ISAACS:** It is important to keep in mind that there's a very  
21 rough relationship between the number of commercial fishermen  
22 active in the fishery and landings. My experience in Louisiana  
23 has shown that any particular year in the oyster fishery and the  
24 blue crab fishery, at least, and also for the shrimp fishery, to  
25 a lesser extent, but my memory isn't perfect there, but about 90  
26 to 95 percent of your effort is going to come from about 50  
27 percent of your active commercial fishermen in any particular  
28 year.

29  
30 70 percent of your landings for blue crabs and oysters in  
31 Louisiana in any particular year is going to come from 25  
32 percent of your commercial fishermen who were active in that  
33 year, and so restricting the number of people who are out there  
34 catching oysters or blue crabs is not necessarily going to  
35 affect your landings very much, if you're only restricting  
36 people at the lower end of that distribution. The same may be  
37 true for shrimp. I don't know, but it would be interesting to  
38 look at that.

39  
40 **CHAIRMAN BARBIERI:** Thank you, Jack. Paul.

41  
42 **DR. MICKLE:** I think I'm going to introduce a caveat within a  
43 caveat, maybe, and I'm going to refer to Leann to help me a  
44 little bit. Within economic conditions and biological  
45 conditions, like a few years ago, when the price went up a  
46 little bit and the gas was down and everything, did the overall  
47 way that they fished, did that change their efficiency of  
48 fishing or style of fishing? I know there's a lot of different

1 ways to do shrimping and all of those things, and does the  
2 economic environment impact the way that shrimping is, because  
3 that would be another caveat, which would obviously be unable to  
4 quantify, and it adds to the murkiness of all this.

5  
6 **DR. HART:** I don't know how to answer that. I am not sure.

7  
8 **DR. MICKLE:** I was asking Leann, actually.

9  
10 **DR. HART:** I think the catch rates did go down, and so you get  
11 more people out there fishing, and it does seem that catch rates  
12 decrease, and so that was one thing we saw, would be lower  
13 effort levels and higher catch rates.

14  
15 **CHAIRMAN BARBIERI:** Thank you, Rick. Leann.

16  
17 **MS. BOSARGE:** Most of our boats are in the federal-water fleet,  
18 and so I wouldn't want to speak for maybe some of the boats if  
19 they're more state-water fleet boats, but I wouldn't say it  
20 changes the actual technique or the way that we approach the  
21 fishery. Essentially, what it does is, from a profit motive  
22 standpoint, it allows you spend more time on the water before  
23 you get to that breaking point, and so it allows you to fish  
24 more when your economics are at an optimal -- Where you've got  
25 your low fuel price and your high shrimp price, you can grind a  
26 little bit longer, as it were, out there.

27  
28 **DR. HART:** Would you say, Leann, that you can afford to have  
29 lower catch rates when it's -- That is probably a weird  
30 question, but --

31  
32 **MS. BOSARGE:** Yes, and you're going to have lower catch rates,  
33 because you're going to have more boats that would have made the  
34 choice maybe not to shrimp as much that year, and so you're  
35 going to have more boats in the water, and so your CPUE is going  
36 to go down.

37  
38 **CHAIRMAN BARBIERI:** That makes sense. Yes, Bob.

39  
40 **MR. GILL:** Thank you, Mr. Chairman. Mike Travis had wanted to  
41 make a comment earlier, and so I would like to hear it, if he  
42 sent the email into Morgan or can otherwise communicate.

43  
44 **CHAIRMAN BARBIERI:** Good point. Morgan.

45  
46 **DR. KILGOUR:** Yes, he did, and I think that they were addressed,  
47 but I will read what he said. It's that there can be more  
48 vessels active in offshore water and federally-permitted vessels

1 active in offshore waters, and this goes back to the difference  
2 between inshore and offshore and state and federal waters.  
3 Vessels do not need a federal permit to operate in state-managed  
4 offshore waters, and there are many vessels that in fact do  
5 that.

6  
7 For example, there were 547 vessels active in offshore waters  
8 between 2008 and 2014 with federal permits. There were 1,816  
9 such vessels in 2009, and 679 such vessels in 2014. The numbers  
10 decreased from 2009 to 2013, but then increased in 2014, most  
11 likely due to increased shrimp prices and lower fuel prices.

12  
13 **CHAIRMAN BARBIERI:** Thank you, Morgan. Morgan, let me ask you  
14 something else. What is the -- I am trying to understand what  
15 is the actual purpose of Action 3? Is this to control fishing  
16 effort in any way or -- I am just not really understanding what  
17 this monitoring changes in fishery participation in determining  
18 if additional measures should be established.

19  
20 **DR. KILGOUR:** Right, and so the fishery is controlled already.  
21 It's under a moratorium. The moratorium has been extended for  
22 another ten years, and so we have a -- The only way you can get  
23 into the fishery is to buy somebody's permit. This action is a  
24 way to say, okay, when is the number of permits going to get too  
25 low under that moratorium to potentially open up a new permit  
26 pool that keeps the level of permits capped at some threshold,  
27 but will still allow new participants, because, right now, to  
28 get in, you have to buy someone's permit, and that's very  
29 expensive.

30  
31 This permit pool would open it up for the typical twenty-five  
32 dollars for a shrimp permit from NMFS, but it would cap the  
33 number of permits at whatever this threshold level is, and so  
34 that's what this is. It's making it so that the number of  
35 permits doesn't decrease for forever.

36  
37 **DR. HART:** Mr. Chairman, Mike sent me an email to remind me to  
38 tell you that this analysis has to be viewed in the context of  
39 the entire amendment and the need to establish and achieve OY,  
40 and so it's not just for Action 3.

41  
42 **CHAIRMAN BARBIERI:** The analysis is actually looking at a risk  
43 assessment for actions that entail more than Action 3, Rick?

44  
45 **DR. HART:** Yes, it needs to be taken into context with all of  
46 17B. In reading these comments from Mike, he wrote also that  
47 2014 is a perfect year to illustrate how economic conditions  
48 improved and number of active vessels and effort increased as a

1 result, which put us right on the boundary with respect to red  
2 snapper bycatch target, and remember that sea turtles aren't the  
3 only consideration in Action 3 of this amendment, and so it does  
4 need to be viewed in a larger context as well. I don't know if  
5 that helps to address your question.

6  
7 **CHAIRMAN BARBIERI:** It did. Thank you, Rick. Ken.

8  
9 **DR. ROBERTS:** Thank you, Mr. Chairman. To a different point, I  
10 think it might be useful for someone to give the council  
11 guidance on what is a good economic year in the shrimp industry,  
12 if that's going to be the main criterion on the basis of  
13 expanding the fleet in terms of people that are eligible.

14  
15 That information, I think, needs to be very, very strong, and  
16 not as subjective as it would tend to be, I think, without some  
17 real guidance, because I think the council could get in some  
18 trouble about why they are letting people in if there is not  
19 some really strong delineation of what is a good economic year  
20 in the shrimp fishery.

21  
22 In one year, I just think the mechanics of it -- You won't know,  
23 even if you have a good means of determining that. It will take  
24 you a year to get that information, at least, to do it, and then  
25 you're going to be letting people in on the basis of one year of  
26 information, and it may turn around very quickly, about the time  
27 you're ready to implement it, and so I think two things. You  
28 need to have a well-documented basis on which to determine what  
29 is a good year that would be an incentive for people to come in,  
30 number one. Number two, you may want to look at eligibility or  
31 letting people in on three-year average or something like that,  
32 instead of trying to chase everything on a one-year basis, but  
33 that's just a general comment.

34  
35 **CHAIRMAN BARBIERI:** Yes, and thank you, Ken. I see that Morgan  
36 has a comment to that effect.

37  
38 **DR. KILGOUR:** I am going to disagree with Mike, in that the risk  
39 assessment was specific to the sea turtle effort threshold and  
40 whether or not the values or the thresholds that are presented  
41 in Action 3 could exceed that sea turtle effort. That was what  
42 they were requested to do.

43  
44 The context of the optimum yield, that was addressed by a  
45 working group, and it was also presented to the SSC at the June  
46 SSC meeting and how they came up with the optimum yield, and so  
47 this risk assessment was specific to are these threshold values  
48 in danger of exceeding that sea turtle threshold. That's Action

1 3, and it's not the entire amendment.

2  
3 As far as the economic analysis goes, I agree that all of that  
4 needs to be done, and it is currently underway, but that's part  
5 of the broader amendment. This risk assessment is specific to  
6 Action 3, and I am trying to steer us back onto addressing the  
7 questions that were in your scope of work, and I am sorry to  
8 kind of put a hammer down on that, but that's where I am going  
9 to disagree with Mike on what you're tasked with doing today.

10  
11 **CHAIRMAN BARBIERI:** No apology needed.

12  
13 **DR. HART:** Mr. Chairman, I am being Mike's mouthpiece here, I  
14 guess. I am just relaying his email. Mike says that Action 3  
15 is in support of Action 2. If there is no Action 2, there is no  
16 Action 3 and no amendment, and so the risk assessment is a  
17 complement to the earlier analysis that had already been done in  
18 support of Actions 1 through 3 and they are tied at the hip. I  
19 will leave it at that.

20  
21 **CHAIRMAN BARBIERI:** Thank you, Rick. Ryan.

22  
23 **MR. GANDY:** I think the most concerning thing is the latent  
24 effort within this. By setting that minimum threshold, you are  
25 saying that you've already mastered your concept of latent  
26 effort that we know can change, and so I think more clarity on  
27 how that latent effort actually functions with the economics I  
28 think would provide more clarity. Otherwise, setting a  
29 threshold and then opening it up to a twenty-five-dollar permit  
30 or what have you could let in a floodgate of then that latent  
31 effort -- Some of those licenses also get sold, and the scenario  
32 is one that I think needs some more information, for me.

33  
34 **CHAIRMAN BARBIERI:** Thank you, Ryan. Will.

35  
36 **DR. PATTERSON:** Rick, I'm curious about your Slide 5, where you  
37 have the quantitative analysis and you're trying to fit a linear  
38 relationship there. The question came up earlier about 2010,  
39 the oil spill year. That one value that is the farthest to the  
40 right in your plot, can you tell us what year that data point is  
41 from?

42  
43 **DR. HART:** It should be marked on there, if we can put that  
44 slide up.

45  
46 **CHAIRMAN BARBIERI:** Charlotte is working on it now, Rick.

47  
48 **MR. ATRAN:** It's Slide 5.

1  
2 **DR. HART:** I can answer it. Which point was it? I'm looking at  
3 it on my screen.  
4  
5 **DR. PATTERSON:** It's the one farthest to the right.  
6  
7 **DR. HART:** That's 2008.  
8  
9 **CHAIRMAN BARBIERI:** We've got it on the screen now, the right  
10 one, Rick, with the right numbers actually showing up.  
11  
12 **DR. HART:** While effort was a little lower in 2010, it wasn't --  
13 Only really off of Louisiana was closed. Other states were  
14 open, and it wasn't excessively low that year.  
15  
16 **DR. PATTERSON:** So, Rick, I'm curious then about 2008. Is that  
17 a year when you had more of the inshore boats fishing in those  
18 near shore, but offshore waters, and, therefore, you get a  
19 higher number of vessels or what explains that 2008 point? Is  
20 there anything apparent just in the basic information?  
21  
22 **DR. HART:** These are number of permitted vessels, and so those  
23 are the number of vessels that have federal permits. Maybe I'm  
24 not understanding your question, Will.  
25  
26 **DR. PATTERSON:** I guess I am still trying to figure out this  
27 whole moratorium deal. There's a cap, but you can have  
28 fluctuating permits among years?  
29  
30 **DR. HART:** No, and, actually, the permits can only go down.  
31 There can't be an increase in the number of permits at this  
32 time. They are locked in. If a permit is terminated, it  
33 doesn't come back, and so that's why, from 2008 to 2014, you can  
34 see a linear decrease in the number of permits.  
35  
36 **CHAIRMAN BARBIERI:** Just a reminder that Morgan really is  
37 handling most of the regulatory issues associated with this  
38 amendment.  
39  
40 **DR. HART:** Yes, and I can't speak to that.  
41  
42 **DR. KILGOUR:** I just wanted to say, if you look at the dates on  
43 that, you will see that 2007 is the very right-hand column and  
44 2014 is the very left-hand. It goes backwards through time, and  
45 so you're really looking at the fluctuations in effort over the  
46 Y-axis and not -- The number of permits has decreased since the  
47 institution of the moratorium. That is hands down what has  
48 happened.

1  
2 **DR. HART:** Right. The X-axis is permitted vessels, and so the  
3 scale starts at 1,500 up to 1,950, and 2014 is around 1,500 and  
4 decreasing to the right, as you go back in time. In 2008, there  
5 is nineteen-hundred-and-some permits. In 2014, there is little  
6 over 1,500.

7  
8 **CHAIRMAN BARBIERI:** Okay. Let me remind the committee again  
9 about the council's specific question. The council would like  
10 to know what the probability is of exceeding the effort cap  
11 associated with turtles under each of the alternatives in Action  
12 3, and so, yes, this is related to the number of permits and the  
13 cap in Action 3, but there is another factor here coming into  
14 play, and that is the cap associated with turtles, in terms of  
15 the maximum effort, and I think that's the 133,000 nominal days.

16  
17 **DR. KILGOUR:** Right, and so, again, that was set to the optimum  
18 yield, that effort or the landings associated with that 2009 and  
19 133,000 nominal fishing days. That is Alternative 2 in Action  
20 3, which equates the number of permits equal to what was  
21 estimated to be the landings for 2009 in the model, and so we  
22 have OY equal to that landings in 2009, and then Alternative 2  
23 in Action 3 is equal to that OY.

24  
25 It's the number of active vessels associated with that OY, and  
26 so the major differences in Action 3 are that Alternatives 2  
27 through 5 deal with the number of active vessels, and  
28 Alternative 6 deals with the number of permits, and so that  
29 takes into account active and inactive vessels.

30  
31 **CHAIRMAN BARBIERI:** Thank you, Morgan. Back to the question.

32  
33 **DR. HART:** A caveat to that is active permitted vessels, which  
34 is different than active vessels.

35  
36 **DR. J. POWERS:** Basically, I think this discussion has led us to  
37 the comment that Rick had made on one of his slides. To answer,  
38 bluntly, the request of the council, the probability of  
39 exceeding the sea turtle-related threshold on total effort under  
40 the alternatives in Action 3 cannot be determined, because there  
41 is no statistical relationship, and so on. What we also want to  
42 do is emphasize the reasons for this, and that there was a list  
43 of caveats associated with that, and that, in order to implement  
44 something into the future, you have to be -- You, being the  
45 council, has to be aware of defining it in terms of some sort of  
46 optimal or acceptable economic conditions.

47  
48 In other words, what Ken Roberts had just said, and so those are

1 the key items that I think we need to emphasize, and I don't  
2 know that it's useful to have those in terms of a motion, but  
3 certainly in terms of the record of the discussion.

4  
5 **CHAIRMAN BARBIERI:** Thank you for that, Joe. Ben.

6  
7 **DR. BLOUNT:** I agree with everything that Joe said. That was  
8 right on. The real problem is there is no way to control  
9 effort, and so what we need to do is to think about the  
10 conditions under which effort would really become a problem, and  
11 it would be exactly the ones that Ken laid out, and so I think  
12 that if we simply said that and made it information available to  
13 the council, that's the best we can do.

14  
15 **CHAIRMAN BARBIERI:** Considering the way we operate and how  
16 complicated this issue is, I do feel that actually if we could  
17 work on putting together a motion. I think it would be helpful,  
18 and it can be done in concert, really, with a general consensus  
19 of the committee, but I think having something in writing that  
20 we can put in front of us here clear would be helpful. I would  
21 really appreciate somebody from the committee taking a stab at  
22 that, and I am not looking at anybody specifically at this  
23 point.

24  
25 **MR. GILL:** I am glad you said that, Mr. Chairman.

26  
27 **CHAIRMAN BARBIERI:** Joe, sorry, but you summarized that so well.

28  
29 **DR. J. POWERS:** I actually disagree on the fact that a motion is  
30 all that useful, because all the number of items that I talked  
31 about, are we going to put that all in a motion that everybody  
32 is going to agree to? To me, the record of this meeting and the  
33 key things that we want to emphasize are that we can't do it  
34 with what they asked, the reason being there is a number of  
35 caveats.

36  
37 **CHAIRMAN BARBIERI:** It doesn't have to be a motion, and perhaps  
38 it is my bias for being on the South Atlantic, where we always  
39 have -- We operate by consensus, but we have a running document  
40 on the board where the committee, while in the room, can state  
41 our message to the council clearly.

42  
43 It doesn't have to be a motion, but we have something that we  
44 are all here looking at the screen, and we can build some kind  
45 of a summary, a summary paragraph, that later doesn't get  
46 interpreted two or three degrees, depending on who is going to  
47 give the presentation to the council or how the council reads  
48 what was written, and so just repeating the bullet points, and



1 let's not even call this a motion. There will be no voting, but  
2 we need to put together just a little summary, and you had it,  
3 Joe.

4  
5 **DR. J. POWERS:** Well, all right, if you're just looking for  
6 bullet points. One is the analysis, and I think most of us on  
7 the SSC, if not all of us, agree that you can't get a  
8 probability of that relationship that they asked for, and so I  
9 am not sure how you would word that. Basically -- Well, I will  
10 go back to the actual presentation.

11  
12 **CHAIRMAN BARBIERI:** Perhaps a quantitative metric of the risk  
13 associated --

14  
15 **DR. J. POWERS:** No, just a statement that the probability of  
16 exceeding the sea turtle-related threshold, and I'm reading this  
17 quickly, because it's the beginning of Slide 5. The probability  
18 of exceeding the sea turtle-related threshold on total effort  
19 under the alternatives in Action 3 cannot be determined because  
20 there is no statistical relationship between the number of  
21 federally-permitted vessels and total effort.

22  
23 The second bullet would be the reasons for this are due to the  
24 caveats, and there are a number of them that are listed in the  
25 document, and I am not going to go through the individual ones.  
26 Then the third bullet, and this is where I need the most help,  
27 and perhaps Ken can suggest something in this regard, but it's  
28 basically this is what the council has to deal with, in terms of  
29 understanding the economics, before they can make these sorts of  
30 determinations.

31  
32 **DR. ROBERTS:** I think the reasons I heard, if in fact there was  
33 a relationship and you could get to a decision point because  
34 there was a relationship, you would need some sort of solid  
35 basis on which to make your determinations about how you were  
36 going to let people in, because the only thing we talked about,  
37 really, was a good market year or a year when economics was  
38 good.

39  
40 Well, I think that's probably correct, but there are several  
41 things that relate to that, in terms of information delay, who  
42 is going to be responsible. You could turn it over just to the  
43 AP and let them do something subjectively, if that satisfies the  
44 council, but there has to be some attention paid to generating  
45 the means by which you are going to make that determination that  
46 it's a good year and therefore you will let people in the  
47 fishery.

48

1 **CHAIRMAN BARBIERI:** There, this could read, and perhaps Ken can  
2 help me build this up here, further, more detailed economic  
3 information -- Go ahead and jump in.  
4

5 **DR. ROBERTS:** Not just more detailed, but specific economic  
6 criteria need to be cited on which to base determinations for  
7 entrants or opening up more vessels into the fishery.  
8

9 **CHAIRMAN BARBIERI:** So specific economic criteria.  
10

11 **DR. ROBERTS:** On which to base a council decision as to opening  
12 the fishery to more permits or something along those lines. I  
13 know, from history, that the Miami group does put out annual  
14 budgets on the shrimp fishery, particularly the offshore shrimp  
15 fishery, but those, I think we all know, come a year late, so to  
16 speak, and they are very good. I used them a great deal before  
17 I retired, but there is a great delay there, and the whole  
18 discussion here is being about annually opening up something,  
19 and I am not sure the information, even if you have specific  
20 criteria, would allow that kind of rapid response.  
21

22 **CHAIRMAN BARBIERI:** Lee.  
23

24 **DR. ANDERSON:** Ken is absolutely right, and it's a very good  
25 point. I think the other point that needs to be made here is  
26 that there's going to be a trade-off that the turtles are going  
27 to provide another constraint in addition to the profitability,  
28 because you may have profitability that says let them in, but  
29 then we get back to the question the council asked of what is  
30 the effect on turtle mortality. Somehow, that needs to be in  
31 there.  
32

33 **CHAIRMAN BARBIERI:** Sue.  
34

35 **MS. GERHART:** I just want to point out -- I'm not sure that you  
36 all were clear on this, but there are two actions previous to  
37 the action you're talking about in the amendment, one of which  
38 sets OY and considers the economics, the turtle thresholds, the  
39 red snapper thresholds, et cetera, and so some of those things  
40 that you're talking about incorporating into the decision were  
41 in the previous action that set OY.  
42

43 In Action 3, we then used the numbers that came out of that to  
44 set Alternative 2 in Action 3, and so some of what you're  
45 talking about has already been considered in the amendment, but  
46 just outside of this action itself.  
47

48 **CHAIRMAN BARBIERI:** Sue, to that specific council question, do

1 we have information now in the amendment to determine what the  
2 probability is of exceeding the effort cap associated with  
3 turtles?  
4

5 **MS. GERHART:** No, and that was what was requested by the  
6 council, that there was no risk associated with that, and they  
7 wanted to ask the Science Center if they could come up with a  
8 risk. They determined they couldn't come up with an actual  
9 quantitative, but they did what they did qualitatively to get as  
10 close to that as they could, but, again, the request was about  
11 what is the risk of hitting that turtle threshold, which was  
12 only a part of what went into the OY in the previous action.  
13

14 **CHAIRMAN BARBIERI:** Thank you, Sue. Morgan.  
15

16 **DR. KILGOUR:** I just wanted to reiterate that the number of  
17 permits in this threshold would not change on an annual basis.  
18 I think I heard that that needed to be assessed. This would be  
19 the number, and so whatever is established in Action 3 is the  
20 number of threshold permits until the council would change it  
21 again via another amendment. It wouldn't change on a year-to-  
22 year basis also, and so whatever the council chooses in Action  
23 3, whichever alternative, that's the threshold number, and so I  
24 just want to be clear that this is not going to be a yearly  
25 discussion.  
26

27 **CHAIRMAN BARBIERI:** Thanks, Morgan. That is helpful. Okay,  
28 folks. Back to our bullet statements here. I am not even sure  
29 if we need any more or if we just need to flesh out, or, if we  
30 have the idea there, we can actually work on the language  
31 offline as we work on our report, when it's circulated, but I  
32 just wanted to capture the main ideas discussed.  
33

34 **DR. J. POWERS:** The one thing that I think we ought to mention  
35 specifically is in terms of the caveats, this discussion about  
36 latent effort and not really understanding what's happening with  
37 latent effort, and so that should be highlighted, I think,  
38 amongst the caveats.  
39

40 **CHAIRMAN BARBIERI:** Yes, Jeff.  
41

42 **DR. ISELY:** Just, to that point, I think a lot of that is  
43 captured in Action 4. If you go through 17B, it talks about  
44 permits that aren't used. If they're not used within a year,  
45 they go into a separate pool, and so I think some of that is  
46 captured farther down in 17B, but the preferred alternative,  
47 Alternative 4 in 17B, says when that number hits 1,300 permits  
48 that some other action takes place. Well, based on the table

1 that was provided earlier, Table 5, at 1,300, there was always a  
2 high probability of exceeding the turtle threshold.

3  
4 **CHAIRMAN BARBIERI:** Sue, did you have a --

5  
6 **MS. GERHART:** Just a clarification. When you look at Action 4,  
7 that's only for the permits that would be in this pool and not  
8 all permits, and so it's just those ones that would be given out  
9 that normally would have gone away permanently.

10  
11 **DR. HART:** Can I make a clarification, please?

12  
13 **CHAIRMAN BARBIERI:** Yes, Rick, please.

14  
15 **DR. HART:** The relative risk is high relative to the other  
16 levels, and so that's just to clarify.

17  
18 **CHAIRMAN BARBIERI:** Okay. It's time to wrap this up, and so if  
19 we can go back to our bullet statements and scroll up just a wee  
20 bit. If we have enough there to capture the main points that we  
21 want to include in our report to the council, we can flesh this  
22 out and work on a more descriptive narrative when we get to that  
23 stage, but any other points or any other issues that you feel  
24 are important to be integrated into these statements?

25  
26 Seeing none, to my understanding, and please jump in and help me  
27 interpret this, but I think that we actually have addressed the  
28 question that the council asked, and we have reviewed the  
29 analysis and provided some recommendations to the information  
30 context and suitability of this analysis to inform further  
31 decisions. Anything else that anybody would like to bring up  
32 regarding Agenda Item VIII?

33  
34 Seeing none, this concludes Agenda Item VIII. Rick and Mike and  
35 everybody else involved in this presentation, thank you so much  
36 for putting this together and being available to provide all the  
37 discussion points and address all the questions. Jim Nance, if  
38 you are still there and listening, thank you as well and others.  
39 We will take a fifteen-minute break and reconvene the Standing  
40 and Reef Fish SSC Session Number 2.

41  
42 **DR. HART:** Thanks, Luiz. I appreciate it. I appreciate the  
43 invitation to speak and thanks, Morgan.

44  
45 **CHAIRMAN BARBIERI:** Thank you.

46  
47 (Whereupon, a brief recess was taken.)

48

1 **CHAIRMAN BARBIERI:** All right. We are now going to start  
2 Session 2 of the Standing and Reef Fish SSC meeting. We are  
3 going to Agenda Item IX, the Decision Tools for Gray  
4 Triggerfish. Before Mike Larkin starts with his presentation, I  
5 want to just go briefly here over our scope of work and the SSC  
6 action items.

7  
8 Southeast Regional Office staff will review the methodology in  
9 two Excel spreadsheets, one each for the commercial and  
10 recreational sectors, developed to analyze the projected impacts  
11 of combinations of management measures on commercial and  
12 recreational gray triggerfish harvest.

13  
14 The decision tools are used by council staff to develop  
15 alternatives for gray triggerfish management in Amendment 46.  
16 The SSC is asked to review and comment on the adequacy of the  
17 methodology and, if appropriate, make recommendations for  
18 improvement.

19  
20 If I remember correctly, Mike came and presented a previous  
21 version of this decision tool that looks at the potential  
22 relative impacts of different management alternatives on gray  
23 triggerfish stocks, and the SSC made some suggestions and asked  
24 for some adjustments, and so Mike is back now to present this to  
25 the committee and see if we can give our blessing, so to speak,  
26 to this methodology and have it adopted by council staff and  
27 others, who are looking into a whole number of management  
28 alternatives to be considered by the council. With that, Mike.

29  
30 **DECISION TOOLS FOR GRAY TRIGGERFISH**  
31 **COMMERCIAL SEASONS AND TRIP LIMITS**  
32

33 **DR. LARKIN:** Thank you. Last time, in June, I just talked about  
34 the recreational decision tool, and so I'm going to go through  
35 that next, but, first, I'm going to go through the commercial  
36 decision tool. I also want to point out, in the briefing book,  
37 if you really want to get into the weeds, there are reports on  
38 both the commercial decision tool and the recreational decision  
39 tool.

40  
41 Again, the rationale is that gray triggerfish, based on the most  
42 recent assessment, is not experiencing overfishing, but it is  
43 overfished, from SEDAR 43. Additional management measures are  
44 needed to rebuild the stock. Amendment 46 is proposing a range  
45 of ACLs, ACTs, and trip limits, and I have that crossed out  
46 there, the changes to seasonal closures, because, originally,  
47 that's what the council was considering, but those got removed  
48 from Amendment 46. They are not considering seasonal closures

1 for the commercial sector anymore.  
2  
3 Really, the decision tool, now that that's been removed, isn't  
4 really needed. It just turns into a fancy trip limit analysis  
5 now, but, since I already had it, I figured I would present it,  
6 and so I didn't do a whole lot of work on it, because the  
7 seasonal closure component was removed.  
8  
9 The first step in it is what's the future landings predicted in  
10 2017, commercial landings, and so, if you look at the history,  
11 Amendment 37 was implemented in 2013, in June of 2013, and this  
12 imposed a twelve-fish trip limit, and so that's in numbers of  
13 fish, on the commercial sector, and it closed the season in June  
14 and July.  
15  
16 We're trying to look at -- That's what the current status quo  
17 is, a twelve-fish trip limit on the commercial sector and closed  
18 in June and July, and so we're using that to predict future  
19 landings. We looked at historical landings. For January  
20 through May, I took the average monthly landings from 2014 and  
21 2015 to predict the landings for those months. I didn't go  
22 further because of changes because of Amendment 37.  
23  
24 Then, since June and July was closed in Amendment 37, I had to  
25 look back further, and so I took the average monthly landings  
26 from 2008, 2009, and 2011. I did not include 2010, because of  
27 the Deepwater Horizon oil spill. I did not include 2012,  
28 because there was an early closure that year, and so it wasn't  
29 open year-round, and these landings were actually adjusted.  
30 These did not have the Amendment 37 trip limit, and so I had to  
31 reduce the landings to a twelve-fish trip limit. A few slides  
32 from now, I will show you my method of how that was done,  
33 because there wasn't a trip limit back then in the commercial  
34 sector.  
35  
36 Then, for the August to December landings, I took the average  
37 monthly landings from 2013, 2014, and 2015. I was able to take  
38 2013 landings because we're talking about August now, and it was  
39 back in June of 2013 where the Amendment 37 regulations were put  
40 into place.  
41  
42 The next slide kind of shows you the layout. The red-dashed  
43 line is the predicted landings, and so you can see, from January  
44 to May, taking a look at the -- See how the red line falls  
45 between those two landings, the blue and the gold, using the  
46 2014 and 2015 landings. Then June and July, we took the average  
47 of the 2008, 2009, and 2011, after they were modified for the  
48 new trip limit, and then August through December were following

1 the historical landings of 2013, 2014, and 2015.

2  
3 The management measures in the decision tool, you can look at,  
4 and it's broken down monthly or daily. The data source there  
5 for the seasonal closure is 2017 predicted landings, which is  
6 the red-dashed line that I just showed you in the previous  
7 slide. Then trip limits considered by the council are five,  
8 ten, twelve, and twelve is the current status quo, thirteen, and  
9 fourteen.

10  
11 I included twenty, because, when I did the analysis, it looked  
12 like increasing the trip limit up to thirteen and fourteen  
13 didn't really make a big difference, and so I wanted to provide  
14 a wide range of options for the council, and so I included the  
15 twenty gray triggerfish trip limit, and this was based on the  
16 commercial -- I did this analysis from the commercial logbook  
17 data from 2014 and 2015.

18  
19 The trip limit analysis, the first step was from the commercial  
20 logbook data, and this comes in in pounds, and so I had to  
21 convert it to numbers of fish. I used recent average weight,  
22 which came from the 2014 and 2015 commercial TIP data, which  
23 essentially is a dockside intercept of the commercial boats.  
24 That's what the TIP data is, which has length and weight data of  
25 what they're catching, and so I used that to generate the  
26 current average weight.

27  
28 Then there were two methods, because, one, considering that the  
29 twelve-fish trip limit is the current trip limit, they're  
30 considering both a reduction in that, and so a drop down to five  
31 or ten fish, or an increase above the twelve-fish trip limit of  
32 thirteen, fourteen, or twenty.

33  
34 First, for the five or ten, which are below the status quo, if  
35 the catch was greater than the trip limit being analyzed, the  
36 value was reset to the new trip limit. For example, if I am  
37 analyzing the five gray triggerfish trip limit and there's a  
38 trip with eight gray triggerfish, that trip was reset to five  
39 fish, and so, essentially, now they have to follow the  
40 regulations and have to stay with five.

41  
42 For the greater than twelve, to do the analysis for those, I  
43 assume that any trip that met the current trip limit of twelve  
44 fish would also meet the proposed increased trip limit. An  
45 example is, if I'm analyzing the fourteen gray triggerfish trip  
46 limit, a trip that reported twelve gray triggerfish, I bumped  
47 that up to reset it to fourteen gray triggerfish.

48

1 In both methods, the percent change in landings were calculated  
2 by comparing the modified landings, and so modified of were they  
3 reduced for the five or ten or were they increased by the  
4 thirteen, fourteen, or twenty, and compare those to the  
5 unmodified landings to get at either a percent decrease in  
6 landings or a percent increase in landings.

7  
8 The next slide is showing you the distribution of the number of  
9 gray triggerfish per trip, and here is the percent change here,  
10 and I did this for each month. I looked at the number of fish  
11 caught in each individual month, and so you can see the status  
12 quo. It's zero percent, but if you drop down to -- I am just  
13 going to go in January, the first month there, just to give you  
14 an example. If you drop down to five, you have a 57.9 percent  
15 reduction in landings, but, if you increase up to a twenty-fish  
16 trip limit, you get a 9.6 percent increase, and so you can see  
17 how some of them are negative, and they reduce the landings, and  
18 other ones were positive, and they increase the landings. It's  
19 done for each individual month, based on the commercial logbook  
20 data.

21  
22 The commercial decision tool was developed to allow the council  
23 to evaluate reductions in harvest associated with seasonal  
24 closures and trip limits, and it was created in Microsoft Excel  
25 software with drop-down menus, and the point I'm trying to make  
26 with this slide is I'm trying to make something simple and  
27 useful for like a Rubik's Cube analysis. If you change this,  
28 how does this change?

29  
30 The council can use this, and not only the council can use this,  
31 but the fishermen can use it. It goes in the briefing book, and  
32 so the NGOs use it. I am just making this point, because I know  
33 I'm talking to the SSC now, and a lot of you folks are in the  
34 mindset of someone gives you an autoscript and a dataset and you  
35 run it. That's not really practical for what we would use for  
36 engaging with the council, and so I'm trying to give a very  
37 user-friendly tool for them to use to evaluate these different  
38 regulations being considered.

39  
40 Then the landings equation that goes into the model or model  
41 decision tool, whatever you want to call it, it's done for each  
42 month, the predicted landings, and that's based on the 2017  
43 predicted landings multiplied by the percent of the month open  
44 to fishing multiplied by the percent of landings reduced from  
45 the trip limit. It does that for each individual month, and so  
46 what I'm going to show you now is what we give the council, and  
47 it goes into the briefing book, and it's used by fishermen and  
48 so forth.



1  
2 Some of you have seen this before, but this is -- Since the  
3 council get rid of it, I just kind of set this already to --  
4 They're not considering other options, and so right now it's  
5 just fixed to being completely closed in June and July. Then  
6 here is a little drop-down menu here that you can choose whether  
7 you want to increase to a twenty, fourteen, thirteen, or if you  
8 want to drop down to a five or a ten or if you want to keep it  
9 at the status quo.

10  
11 You can see how the landings change per month here, and then  
12 here is the total projected landings here, in this cell here.  
13 Anyway, you can see, as you decrease, the landings decrease, if  
14 you decrease the trip limit, or, if you want to increase, up to  
15 fourteen or all the way up to twenty, you can see how it impacts  
16 the predicted landings.

17  
18 Then, down here, these are the different ACLs and ACTs being  
19 considered by the council, and you can see how these landings  
20 are relative to the different ACLs and ACTs. If there is an  
21 overage, it's highlighted in yellow. Then down here is a  
22 figure. You can see how the cumulative landings over time  
23 change and whether they exceed the different ACTs being  
24 considered here. Then, over here, is the output. You can see  
25 projected closure dates, when will they close, based on the  
26 different ACTs, and the days in the season.

27  
28 This will change. You can see if I decrease down to a five gray  
29 triggerfish limit there -- Actually, I'm going the wrong way.  
30 If you increase it to a twenty and -- Just for example's sake,  
31 if you actually keep that month open, you can see how it's a  
32 little bit higher now, but, anyway, this is just impacted by the  
33 different changes you make here.

34  
35 That's the commercial decision tool. Now that the council  
36 dropped the seasonal closure, this is fixed. It's not as useful  
37 as we want it to be, and so, anyway, I will address any  
38 questions on the commercial and then I will move on to the  
39 recreational one, which I did a lot more work on, if there any  
40 questions on the commercial.

41  
42 **CHAIRMAN BARBIERI:** Thank you, Mike. Any questions for Mike  
43 regarding the commercial decision tool? Jason.

44  
45 **DR. ADRIANCE:** Thank you, Mr. Chairman. Just a quick  
46 clarification. So the assumption is only those folks that would  
47 have been successful at reaching twelve would reach a higher --  
48

1 **DR. LARKIN:** Yes, because it's always tricky. Since there was  
2 already a trip limit, what would it be if you didn't have that  
3 trip limit, but, yes, that's the assumption, that the ones that  
4 met it before would also meet the thirteen and fourteen one and  
5 twenty. If you want to save questions until the end, I will  
6 move on to the recreational one, but if there's no questions on  
7 the commercial --

8  
9 **CHAIRMAN BARBIERI:** Any other questions on the commercial? I  
10 guess not. Thank you, Mike.

11  
12 **RECREATIONAL SEASONS, SIZE LIMITS, BAG LIMITS, AND EFFORT**  
13 **SHIFTING**  
14

15 **DR. LARKIN:** The recreational decision tool, this is still the  
16 same. It's not experiencing overfishing, but it is overfished.  
17 Additional management measures are needed. You can see down her  
18 that this is -- Amendment 46 is proposing a range of ACLs, ACT,  
19 and changes to the -- For this one, they are considering changes  
20 to the seasonal closures, size limits, and bag limits.

21  
22 Again, I guess I'm trying to point out in this slide that this  
23 is something user-friendly for the council to use to -- I like  
24 to call it a Rubik's Cube analysis. If you change this, how  
25 does everything else change? It's to give the council, as well  
26 as the public, something useful to look at for the different  
27 management regulations being considered.

28  
29 In the June meeting, that's when I went into detail about -- The  
30 June SSC meeting is when I presented the recreational decision  
31 tool, and I went over more details of the landings and how we  
32 incorporated uncertainty in the landings and confidence  
33 intervals around them and details of the size limit and bag  
34 limit analysis, and I went over the decision tool.

35  
36 In this one, I wasn't going to go into those, unless you need me  
37 to, because I know you guys are short on time and have a lot of  
38 stuff to cover. Instead, I was going to focus more on new  
39 analysis that I did for it.

40  
41 One of the questions that I had, and I believe it was you, Kai,  
42 that asked what is the accuracy of these decision tools, and so  
43 we also have one for gag, but it's just not -- That one, I  
44 didn't include it here, because it's just -- It's for  
45 predicting, and it just came out last year, and it's predicting  
46 the 2016 landings, and so we're still waiting to see how the  
47 2016 landings lay out.

1 Anyway, for the ones that we do have available, the recreational  
2 decision tools for the Gulf, how accurate are they? For gray  
3 triggerfish, the one we did back in Amendment 37, which was  
4 imposed in 2013, the following year, it actually was -- The  
5 prediction was below what -- The actual landings were higher,  
6 21.2 percent higher, and so the prediction by the decision tool  
7 was lower than what we thought they would be, and also, greater  
8 amberjack, the decision tool for that one, the predictions for  
9 the following year, that one also had -- It was predicted to be  
10 under the actual landings, meaning the prediction from that  
11 decision tool was 30 percent below what the actual landings  
12 were.

13  
14 An issue that could resolve that is the tricky thing of effort  
15 shifting, which is difficult to deal with, but, just looking at  
16 the literature, at some examples here, temporal closures can  
17 result in fishing effort shifting to time periods outside the  
18 closure, which likely could be the case in both of those  
19 examples, in a previous slide, and the amount of effort shifting  
20 can vary by species and time period, just to make it more  
21 tricky.

22  
23 I've got to give credit to Nick Farmer. He is really the one  
24 that designed this. In fact, Nick, please help me if I  
25 completely mess this up in this description, but, anyway, how do  
26 we account for effort shifting?

27  
28 Effort shift scalars were designed to redistribute days as a  
29 proxy for increasing effort before and after the closures. The  
30 way we have the model set up, each month has a specific catch  
31 rate, and it's a uniform catch rate within the month. This  
32 allows the decision tool to compensate for lost fishing days due  
33 to seasonal closures while preserving differences in daily catch  
34 rates between months.

35  
36 What I am trying to sum up here is, essentially, it breaks down  
37 by, like I said, how many days were closed compared against how  
38 many days are open. The equation redistributes the open days  
39 based on the scalar, and so let me give you a quick example  
40 here. Let's say we close thirty days in a month, and let's say  
41 it's June. You close thirty days in June.

42  
43 What the model does is it redistributes those thirty days to  
44 outside of that June closure, meaning you could get two more  
45 additional days in January and two more additional days in  
46 February, and that's assuming -- Another tricky thing is how  
47 much effort shifting is being redistributed? Is it 100 percent?  
48 Meaning, if you close the month for thirty days, will 100

1 percent of those days get distributed to the other months, or  
2 will it just be 10 percent?

3  
4 If you would only do 10 percent, then those three extra days are  
5 distributed to the rest of the months. Essentially, that would  
6 even break down to probably like half a day, meaning in January  
7 roughly half a day, or less than that, and in February, and so  
8 it's a tricky issue, because we're dealing with -- We have the  
9 catch rate, the number of fish caught per day, and we're trying  
10 to redistribute to get more days during the open months,  
11 essentially add more landings to the open periods to adjust for  
12 the closed periods, and I will show this in the decision tool.

13  
14 I figured you guys might ask me, and so how have we seen this  
15 effort shifting in Gulf gray triggerfish? I compared the  
16 predicted tool decision landings against actual landings when  
17 the fishery was open. I used the decision tool generated in  
18 2012, the one we generated for Amendment 37, to predict the  
19 2013, 2014, and 2015 landings.

20  
21 The effort shift scalar, meaning what percent of those landings  
22 for each sector are being redistributed to the open season. In  
23 2013, it closed on October 15, and we saw a redistribution of 16  
24 percent of the headboat landings, 1 percent of the charter, and  
25 10.5 percent of the private. Now, it changes the next year. In  
26 2014, you can see the closure is even earlier, and we've got  
27 99.8 percent of the headboat. Charter is zero percent, but  
28 greater than 100 percent for the private, and then it got even  
29 crazier in 2015, which we had a really short season, February 7,  
30 and so greater than 100 percent for headboat. Charter is 47  
31 percent, and greater than 100 percent for the private.

32  
33 As we've seen with this fishery and other fisheries, it seems  
34 like fishermen are just catching on when these closures come  
35 into play that, okay, well, next season, I am going to fish even  
36 more earlier in the season, because it's going to close the next  
37 month or so forth. This is from what we've seen so far. When I  
38 input these percentages into the decision tool, I can match the  
39 landings from what the actual landings were. Now I'm going to  
40 show you how that's done in the decision tool.

41  
42 Again, it's the same format, and it's the same color as the  
43 commercial one. Let's say you go with the June and July closure  
44 here, and it's going to do a drop-down here, and you can see the  
45 landings are reduced here. Then this is effort shift scalar  
46 here, meaning how much do you want the catch rates to be  
47 redistributed in the open period?

48

1 This is really user-defined and kind of up to the council. Do  
2 you think headboat will have a 10 percent effort shift and  
3 charter will have a 30 percent? You can see how it changes the  
4 landings here, and, private, you can have 100 percent effort  
5 shift, meaning 100 percent of these days are redistributed in  
6 the charter, because the model is set up so this kind of  
7 accumulates or adds all the landings from different sectors, and  
8 so we have it broken down by headboat, by charter, and by  
9 private.

10  
11 Then these scalars impact those individual landings, meaning,  
12 for the private landings, there is 100 percent effort shift.  
13 100 percent, in this case, would be sixty-one days redistributed  
14 to the rest of the open period here, and then, of course, it  
15 still has the other stuff, the size limit and the bag limit, as  
16 well. Then, similar to the other one I explained, it's got the  
17 annual catch limits and the annual catch targets.

18  
19 Here, you can see how the landings relate to them. Is there an  
20 overage, yes or no, and then these are set up to the -- You can  
21 see there's a closure here, and so the landings are actually --  
22 They don't increase here, and then it kicks in again, to see if  
23 they exceeded the ACTs and the projected closure dates and the  
24 days in the season.

25  
26 This is stuff I went over before, but this is all relative to  
27 the status quo, and this is set up assuming that there is no  
28 effort shifting, and also this is assuming that the current  
29 regulations of the current size limit and the current bag limit,  
30 and so this is relative change. If you change those, how much  
31 will the discards change and then how many more dead discards  
32 will be a result of that?

33  
34 Then this incorporates my uncertainty in the landings, which I  
35 talked about last time, but it's basically the upper and the  
36 lower bounds and predictions of assuming the landings are in the  
37 upper bound or if the landings are in the lower bound and then  
38 how those relate to the different ACLs and ACTs. This is a new  
39 thing we're working on with the effort shifting, and so I'm  
40 still trying to wrap my head around it, but, anyway, that's the  
41 summary for the recreational gray triggerfish decision tool I  
42 would be happy to take any questions.

43  
44 **CHAIRMAN BARBIERI:** Thank you, Mike. Any questions or comments  
45 for Mike? Yes, Walter.

46  
47 **DR. KEITHLY:** Thank you, Mike. It would seem to me that the  
48 magnitude of this effort shift scalar would be dependent upon

1 whether recreational fishermen target gray triggerfish, and I  
2 know the MRIP and MRFSS -- They ask the question of what species  
3 do you target, but does gray triggerfish come up as a species  
4 often targeted by the recreational fishermen or is it just a  
5 species caught incidentally with other species?  
6

7 **DR. LARKIN:** That's a good point. I haven't looked at that for  
8 gray triggerfish. You're saying maybe the targeting effort has  
9 increased or decreased, but, for that specific species, I  
10 haven't.

11  
12 **DR. KEITHLY:** I think what I'm saying, more so, is if they don't  
13 target it, then there does not seem to be, at least to me, to be  
14 a need to have that scalar built into the model. It's only if  
15 they target it would have a change in effort by season or  
16 outside of the closed seasons.

17  
18 **DR. LARKIN:** I've got you. I would actually like to ask some  
19 council members. Have you guys had a lot of feedback on the  
20 council on whether they're targeting --

21  
22 **MR. MATENS:** This would be an unsolicited opinion. I think that  
23 triggerfish are targeted in some regions, but not others, and I  
24 think that's the crux of the matter. Quite frankly, I am pretty  
25 old. I never thought I would hear the words "we have to close  
26 the triggerfish fishery".

27  
28 **CHAIRMAN BARBIERI:** Jason and then Kai.

29  
30 **DR. ADRIANCE:** Thank you, Mr. Chair. A quick question. Given  
31 that that triggerfish season has closed earlier each year and  
32 the effort shifting, was there any thought given to shifting all  
33 of the effort to before the June and July season and seeing the  
34 differences, instead of distributing before and after?

35  
36 **DR. LARKIN:** No, and I see what you're saying. Basically, if I  
37 understand you correctly, just keep the June and July closure  
38 and ignore the August to December, just cut those out, assuming  
39 none of the effort shifting goes on there. I haven't, but I'm  
40 thinking that I could certainly do that, meaning so apply it to  
41 the January through May and only let the effort shifting  
42 increase the landings there. Let me also look back for a second  
43 here.

44  
45 **CHAIRMAN BARBIERI:** Mike, Nick has something to add there.

46  
47 **DR. FARMER:** I am not sure if the effort shifting equation  
48 implicitly handles that or not, but you could easily model that

1 with the decision tool in the briefing book by setting all the  
2 closed months to zero manually, if it doesn't handle that within  
3 the equation itself, and so you could very easily see the  
4 effects of that.

5

6 **CHAIRMAN BARBIERI:** Kai and then Jeff.

7

8 **DR. LORENZEN:** Thanks, Mike, for looking at the precision issue.  
9 I think that was very useful. If I understood this correctly,  
10 you have looked -- Empirically, you have looked at the effort  
11 shifting for several years. That's where the next table came  
12 from, and so the question of is it happening or not is sort of  
13 empirically answered that, yes, it's happening big time.

14

15 **DR. LARKIN:** When I do that, it certainly explains the high  
16 landings in January, February, and March, when I do the effort  
17 shifting.

18

19 **CHAIRMAN BARBIERI:** Just to add to that point, Kai, I think this  
20 is another informational content that comes out of this that is  
21 actually very good for us to make a prediction and know that, in  
22 some of those situations, you're going to be stepping outside of  
23 that, because of effort shifting. Jeff.

24

25 **DR. ISELY:** Mike, in one of the previous slides, you show that  
26 effort increased by more than 100 percent in the other cells.  
27 Did you look at the actual cell that was closed? Were there  
28 changes in effort in those cells in response to the closures?

29

30 It may be, if they're not targeting, that you're not going to  
31 get any effort shift, because they will just continue to fish  
32 for the target species during those closed periods and just  
33 discard all of the gray triggerfish. That gets at one of these  
34 targeting things. If they are just out there for gray trigger,  
35 they say, I'm not going to go fish for red snapper, and I'm just  
36 going to go back home, and so those kind of questions would be  
37 good to know.

38

39 **CHAIRMAN BARBIERI:** Okay. Any other questions for Mike? John  
40 Mareska.

41

42 **DR. MARESKA:** Mike, in reading the report, I see that you've got  
43 the discards, the B1 and B2, included. An issue you're aware of  
44 that came up with red snapper is that, as this stock continues  
45 to rebuild, the average size changes, and so how have you  
46 accounted for the change in the discard rate as the stock  
47 continues to rebuild and the average size increases?

48

1 **DR. LARKIN:** Actually, I haven't. This is fixed on what the --  
2 For example, this one is based on the current size, and so  
3 that's certainly a caveat. If the size increases greatly in  
4 2017 and 2018, then the predictions would be off. They would be  
5 even higher then, and so this is based on the current average  
6 size, and it doesn't incorporate any additional growth, if it  
7 continues to increase or decrease in the future, and so that's a  
8 caveat to this analysis.

9  
10 **DR. MARESKA:** Yes, and I think that would be a big concern,  
11 because this is part of possibly an eight to ten-year rebuilding  
12 plan.

13  
14 **DR. LARKIN:** It seems like this stock is quite common on the  
15 SEDAR assessment schedule, and so it does get reassessed  
16 frequently, but that's a simple fix, if I did want to -- I could  
17 always predict what 2017 is going to look like, but I could  
18 also, if I knew what the average size was, I could estimate an  
19 assumption on that, or I could always build that into the model  
20 and look at 2018, 2019, and further ahead, but, right now, it's  
21 currently built on what the current average size is in the  
22 fishery.

23  
24 **CHAIRMAN BARBIERI:** I have a clarification from Nick, and then  
25 Will.

26  
27 **DR. FARMER:** There was a question regarding the time series of  
28 effort, directed effort, towards gray triggerfish. Looking on  
29 the MRIP website, it's pretty variable, ranging from about  
30 200,000 targeted trips down to 26,000 targeted trips, in the  
31 Gulf of Mexico, depending on the year. Some of that has to do  
32 with the changes in the season length, and that would need to be  
33 accounted for, but, basically, the reason that we modeled these  
34 catch rates as catch per open day is to kind of explicitly  
35 handle that, because the catch per unit effort is not as clear  
36 of a signal in a time series for this species, and many of the  
37 species we manage, as catch per open day.

38  
39 You can see, with Mike's kind of retrospective analysis of the  
40 catch per open day rates and an effort shift scalar, it kind of  
41 clearly indicates that effort shifting, in terms of daily catch  
42 rates, appears to be happening, whereas, when you look at  
43 targeted and directed trips, you don't see that same signal.

44  
45 **CHAIRMAN BARBIERI:** Thanks, Nick. Will.

46  
47 **DR. PATTERSON:** This seems like a really useful tool to put in  
48 the council members' toolbox. There is a couple of things that



1 I think are potential issues. One is just to make sure that the  
2 assumptions for these things are in the document and there is  
3 some type of metadata to go with it, so you can say, okay, well,  
4 this is what this model is based on.

5  
6 The second goes back to what John was talking about. As the  
7 stock recovers and the shift in mean size, if this would be an  
8 annual tool, then you would just have to say to only use this  
9 for 2017 and people aren't using that same one in later years.

10  
11 **CHAIRMAN BARBIERI:** I think this is a very good point, because I  
12 see sometimes projections that come at the end with half-a-dozen  
13 or eight different caveats that help you understand the extent  
14 to which those things are really useful or what the conditions  
15 really are that those apply to, and so I guess I am seeing this,  
16 Mike, as more of a recommendation to help -- Not use of the  
17 tool, but basically to help the user understand the limitations  
18 or the caveats and assumptions associated, so they can have full  
19 knowledge of that as they interpret the results. Any other  
20 comments or questions for Mike?

21  
22 As part of our charge here or action, the SSC is asked to review  
23 and comment on the adequacy of the methodology and, if  
24 appropriate, make recommendations for improvement.

25  
26 In talking to Steven yesterday, one of the things that the  
27 council staff, at least, were hoping to achieve is that this is  
28 considered by the SSC as representing a reviewed methodology  
29 that, given all the assumptions and caveats, can be used by  
30 council staff, council members, and the public in general, and  
31 so it's basically to give this the seal of approval as best  
32 scientific information available. With that, I am going to ask  
33 the committee for a motion to this effect. Jeff to the rescue.

34  
35 **DR. ISELY:** I will try it. **The SSC recommends the commercial**  
36 **and recreational effort decision tool as best available science**  
37 **for management decisions related to seasonal closures for gray**  
38 **triggerfish.** Mike, I guess a question to you. Is it for more  
39 than seasonal closures? Are we going to talk bag limits, too?

40  
41 **DR. LARKIN:** Yes, and maybe make it a general statement, because  
42 the commercial one is the -- It used to be seasonal closures,  
43 but that got removed. You can still look at it, but it got  
44 removed by the council, and so I'm saying for commercial and  
45 recreational regulations, but the recreational one does have a  
46 seasonal closure, and it has a size limit and bag limit, and so  
47 I am just trying to think of some general statement.

48

1 DR. ISELY: We can take out the part after "management  
2 decisions" and just say -- Get rid of all the "related to" and  
3 say "for gray triggerfish management".  
4

5 DR. LARKIN: Perfect. Thank you.  
6

7 DR. ISELY: Is that specific enough to cover your needs?  
8

9 DR. LARKIN: Yes, I think so.  
10

11 CHAIRMAN BARBIERI: We have a motion on the board. It has been  
12 seconded. Is there discussion? Any questions or discussion  
13 points? Steven.  
14

15 MR. ATRAN: I don't think you need to do anything to the motion  
16 about this, but, in the discussion in the SSC summary, I will  
17 note that there were concerns about how effort shifting is  
18 handled and about how changes in the average size of the gray  
19 triggerfish may give you some concern about using this for more  
20 than one year.  
21

22 DR. ISELY: If you add something about targeting in there, too.  
23

24 MR. ATRAN: And targeting. Okay.  
25

26 DR. ISELY: Mike, should we take out where it says "recreational  
27 effort decision tool"? **Let's take the word "effort" out.** Now  
28 I'm pretty happy.  
29

30 CHAIRMAN BARBIERI: Then, Steven, also, to the report, I think  
31 Will's point was a good one about the assumptions and caveats  
32 and applicability, or the limitations associated. Like if it is  
33 applicable to just one year, make clear in the documentation  
34 that it is being used just for that year and that it's not  
35 necessarily applicable to other years. John Mareska.  
36

37 DR. MARESKA: I guess I would just have a little bit of concern  
38 about best available science. I think it's appropriate science  
39 for management decisions, but are there any implications by  
40 calling this best available science?  
41

42 CHAIRMAN BARBIERI: Yes, but -- Will.  
43

44 DR. PATTERSON: To me, it seems like there is two different  
45 things here. One, it's the tool, the Excel spreadsheet, that is  
46 perhaps an easy tool for council members to manipulate. Really,  
47 it's just making operational the equations that Nick and others  
48 at the Regional Office already are utilizing to project these

1 things, and so, really, there are two different things here, and  
2 they're kind of getting wrapped together. One is the tool, but  
3 then it's only as good as the assumptions and the estimation  
4 procedures that go into it, and that's what is already being  
5 utilized, as far as my understanding.

6  
7 **CHAIRMAN BARBIERI:** Right, and that's a good point, John,  
8 because I mean Nick knows. He has come to the South Atlantic  
9 SSC several times to present some of these tools, and I think  
10 recently Mike as well, and the committee has had questions about  
11 if we have a regulatory amendment coming up and we are trying to  
12 look at how some of these options are being developed, how do  
13 those relate to the actual rebuilding plan or whatever  
14 regulatory scenario is being considered there.

15  
16 If we look at the methodology in general and we say, no, this  
17 makes sense, they have more flexibility then to be using that in  
18 the background for a whole variety of potential management  
19 actions, because the tool itself is approved, or the  
20 methodology. Will.

21  
22 **DR. PATTERSON:** If Jeff would accept a friendly amendment, maybe  
23 we could say here that "recommends the commercial and  
24 recreational data decision tools as appropriate tools for  
25 council members to evaluate gray triggerfish management  
26 decisions".

27  
28 **DR. ISELY:** I would, but I would say management options.

29  
30 **DR. PATTERSON:** Management options, yes.

31  
32 **CHAIRMAN BARBIERI:** Let me ask SERO staff then, Mike and Nick,  
33 is this okay with you guys?

34  
35 **DR. LARKIN:** It's okay with me. I was going to actually ask  
36 Steven and Carrie if it's okay with them.

37  
38 **CHAIRMAN BARBIERI:** Yes, Dr. Simmons.

39  
40 **DR. SIMMONS:** It will be more than just council members.

41  
42 **CHAIRMAN BARBIERI:** Charlotte is looking for --

43  
44 **DR. ISELY:** We're going to change that from "appropriate tools"  
45 and take out "for council members". I think that's good there.  
46 Thank you.

47  
48 **CHAIRMAN BARBIERI:** Thank you for that. Any other questions or

1 comments regarding the motion on the board? **Hearing none, I**  
2 **think we have enough consensus for me to ask if there is any**  
3 **opposition to this motion as presented? Seeing none, the motion**  
4 **carries unanimously.**

5  
6 Thank you, Mike and Nick, for the presentation and the  
7 clarifications. This brings us to conclusion of Agenda Item  
8 Number IX. The next agenda item, and I think we have enough  
9 time for Evaluation of the Recreational Red Snapper Split  
10 Seasons, and I think Nick Farmer is going to be the presenter  
11 for that.

12  
13 I am going to read here quickly the background information on  
14 this from our scope of work and identify the SSC actions needed  
15 for this item. In December of 2014, the council's Ad Hoc Red  
16 Snapper For-Hire Advisory Panel recommended that the council  
17 adopt a split season for the for-hire component as a whole, such  
18 as 66 percent of the quota would be allotted to setting the  
19 first season and the remaining quota being used to project a  
20 supplemental fall season. The AP did not recommend starting  
21 dates for the first or supplemental fishing seasons.

22  
23 In June of 2016, the council requested an evaluation of split  
24 seasons, specific to the charter vessel subcomponent, and  
25 provided two proposed dates for the first and the supplemental  
26 seasons. The SSC should review the preliminary analysis  
27 conducted by SERO staff and determine if it is the best  
28 scientific information available, to basically give our seal of  
29 approval to this analysis, summary analysis, that Nick is going  
30 to present regarding evaluation of the recreational red snapper  
31 split season. With that, Nick.

### 32 33 **EVALUATION OF RECREATIONAL RED SNAPPER SPLIT SEASONS**

34  
35 **DR. FARMER:** There is a report in your briefing book which gives  
36 a lot more details on the analyses that were conducted, but to  
37 give you a little bit of backstory to supplement what Luiz said,  
38 this was a request by Dale Diaz for the Reef Fish Amendments 41  
39 and 42.

40  
41 Before I start, I just want to thank Andy Strelcheck, Dr.  
42 Jessica Stephen, and Dr. Michael Larkin. They had some very  
43 helpful comments during the development of this analysis, and  
44 also Dr. John Froeschke for his help in developing many of the  
45 analytical methods for the projections of the red snapper  
46 season.

47  
48 The data inputs for this are the MRIP database that is

1 subsequently processed through the Southeast Fisheries Science  
2 Center for additional QA/QC. Also, within that dataset from the  
3 Science Center is Texas Parks and Wildlife data, and then we  
4 have data coming in from the Louisiana Department of Wildlife  
5 and Fisheries, from the LA Creel Program, and we also have data  
6 coming in through the Southeast Region Headboat Survey, and I  
7 have listed the years for those various programs here, along  
8 with some details, but the take-home message is that, in all  
9 instances, we use the best and most recent available data, along  
10 with the estimates of uncertainty, which are expressed as PSEs  
11 or RSEs or expansion factors, depending on the dataset, and I  
12 will talk a little bit about how we incorporated those  
13 uncertainties in this analysis.

14  
15 Before I do that, I just wanted to give you a backstory on the  
16 split season suggestions that we received from the Gulf Council.  
17 The first option was to open the for-hire, and that would be the  
18 federal for-hire, red snapper season from April 20 through May  
19 31 and then to reopen it on September 1 and close it when the  
20 ACT was projected to be exceeded. The second option would open  
21 June 1, as it normally does, but it would close on June 30 and  
22 then reopen on October 1.

23  
24 There are a whole suite of analytical challenges with evaluating  
25 how federal for-hire catch rates might vary outside of the month  
26 of June and July across the Gulf region, primarily due to the  
27 fact that we just really don't have any decent recent data  
28 regarding those catch rates, and so some questions that are out  
29 there are is there a seasonal dynamic to red snapper catches?  
30 If so, is that due to red snapper stock movements? Is it due to  
31 changes in catchability, maybe due to warmer or colder water  
32 temperatures?

33  
34 Would it be due to differences in fishing effort? Could those  
35 differences be due to lack of customers for the federal for-hire  
36 sector? Could it be due to scheduling conflicts for the  
37 captains or could it be due to weather causing the captains to  
38 not be able to make it out? The question would be, would  
39 fishermen compensate for a change in the season start date and  
40 exert more effort in the open months? If you move the season  
41 start date earlier, maybe you would anticipate lower catch rates  
42 in April, for example, but, because it's the start of the  
43 season, maybe you don't see those reduced catch rates.

44  
45 Long story short, there is lots of uncertainty that we've  
46 attempted to account for here, and so the first thing that we  
47 developed as a building block were ten different scenarios on  
48 what the catch rates would be during the June through July

1 federal for-hire red snapper season, and those are outlined in  
2 another report in your briefing book, which is titled "SERO LAPP  
3 2016 04", which is red snapper recreational season length  
4 projections. Those projections were for both catch rates in  
5 numbers and also for mean weights.

6  
7 There were five scenarios that used recent data, and those are  
8 in blue, and there were five scenarios that were regression-  
9 based, which are in red. For example, there were models that  
10 used 2015 catch rates and average weights, and there were models  
11 that used 2014 catch rates and average weights. There were some  
12 that used regressions over a 2004 through 2015 time series, and  
13 there were some that dropped 2014, because it seems like an  
14 aberrant year for some of the states. There were some that  
15 combined the states into eastern and western Gulf, et cetera,  
16 and so we looked at lots of different ways of projecting the  
17 season length.

18  
19 We accounted for uncertainty by running 1,000 bootstraps on each  
20 of these projections, in terms of the input data, using PSE, and  
21 then we also accounted for uncertainty again by looking at the  
22 uncertainty output from those 1,000 regressions, and so we have  
23 1,000 times 1,000 on the average weights and then 1,000 times  
24 1,000 on the catch rates. Those get combined into a catch per  
25 day in pounds, with a distribution around it.

26  
27 We considered covariates in these regression models, such as  
28 spawning stock biomass, state seasons, federal seasons, fuel  
29 prices, Google trends for the search "red snapper season", which  
30 David Carter and his group down at the Southeast Fisheries  
31 Science Center just wrote a nice paper about as a unique in-  
32 season predictive variable for red snapper catch rates, and then  
33 also per capita GDP, as an estimate of kind of how well the  
34 economy is doing.

35  
36 The outputs look kind of like this. In the upper-left corner,  
37 you're looking at regression. This is for eastern Gulf of  
38 Mexico charter, and so this is rolling Florida, Alabama, and  
39 Mississippi together. You're looking, in the upper-left corner,  
40 at a regression on average weight, and that is just kind of a  
41 base regression, so you can see what it looks like. We ran that  
42 1,000 times, dealing with the uncertainty around each of those  
43 points that you see there, those dots.

44  
45 In the instance of this particular regression, I've got a table  
46 in the catch rate report that shows you all the significant  
47 predictors for the various regressions, but, for average weight  
48 for eastern charter year of rebuilding, so how many years into

1 the rebuilding plan we were, and spawning stock biomass were  
2 significant covariates, and you can see that it basically shows  
3 a rapid increase in average weight post the implementation of  
4 the new revised rebuilding plan and then a more recent leveling  
5 off in average weights.

6  
7 Then the next output from that is the predicted average weights,  
8 and so you can see a histogram there in the upper center, and so  
9 that's the distribution of those 1,000 bootstrapped runs on the  
10 regressions on average weight. The next regression that we run  
11 is on catch per day in numbers. There are significant  
12 covariates for that, where year of rebuilding, length of the  
13 federal season, spawning stock biomass, fuel price, and per  
14 capita GDP, and so there's a lot of different things going on  
15 there, and you can see the regression fit is actually pretty  
16 dynamic and shows an anticipated slight increase in 2016 eastern  
17 charter catch in numbers.

18  
19 The bottom-left corner, you can see the kind of rainbow plot  
20 with the yellow mean is the 1,000 bootstrapped input data series  
21 that were used to fit the regression models for catch in  
22 numbers, just so you can see kind of the noise around the input  
23 data, based on the PSEs.

24  
25 The predicted daily catch rate histogram is shown in the bottom  
26 center, and then combining those two center histograms into a  
27 daily catch rate in pounds per day is in the bottom right, and  
28 so, anyway, that was done for each state and for the east and  
29 west combined, and it was done dropping years and for the  
30 different modes as well, and, in addition to that, we had a  
31 great deal of uncertainty rolled in, with 1,000 bootstrapped  
32 runs on the state-by-state catch rates, which I don't really  
33 show here, because we're dealing with federal for-hire, and so  
34 those become irrelevant for the federal for-hire mode.

35  
36 **CHAIRMAN BARBIERI:** Nick, may I interrupt you? Would you mind  
37 going back just one? Just a clarification there. The predicted  
38 daily catch rate is actually in pounds per day?

39  
40 **DR. FARMER:** We do a regression on average weight, which is that  
41 top center, and then we combine that with the predicted daily  
42 catch rate in numbers per day, which is the bottom center, and  
43 that produces the histogram at the bottom right, which is pounds  
44 per day, yes.

45  
46 **CHAIRMAN BARBIERI:** Okay. Got you. Thank you.

47  
48 **DR. FARMER:** These are the ten different scenarios, in terms of

1 the projected catch rates, and these are showing the state-by-  
2 state regressions for the federal for-hire mode, just to give  
3 you a different look at the way we processed it, and the various  
4 regression scenarios are along the bottom, and so the first five  
5 are just based on empirical data from those previous years, or  
6 averaged across sets of years, and then the five on the right  
7 are based on different regression outputs.

8  
9 That is kind of our base for June and July, and so then the  
10 question is what happens when you move the federal season  
11 outside of June and July?

12  
13 One scenario that we looked at was nothing happens. It's  
14 unscaled. Everything, in terms of catch rate, looks the same,  
15 regardless of what month you start the season. The fishermen go  
16 out and they get their fish regardless, and so that is kind of  
17 our worst-case scenario, and so your federal season, pretty much  
18 regardless of where you try to put it in the calendar year, is  
19 going to be the exact same length as we would predict in June  
20 and July.

21  
22 The next approach that we looked at was a historic by state  
23 approach, and so we scaled the monthly catch rates based on the  
24 mean 2004 through 2007 federal season data, and that was the  
25 time period where the federal season was open April 15 through  
26 October 31, and so we looked at what's the ratio of June and  
27 July for that time period to the months outside of June and  
28 July, and we looked at those by each individual state.

29  
30 That was a little bit noisy, especially for Mississippi, because  
31 there wasn't a lot of data coming out of Mississippi, and so the  
32 Mississippi scalar looked pretty crazy. We also looked at a  
33 scalar combining all those states into a Gulf-wide ratio, and I  
34 will show you a graphic that kind of lets you see what those  
35 scalars look like in a minute.

36  
37 The next thing that we looked at was wind speed, and so these  
38 are what I call Scenarios 4 and 6. In this approach, what we  
39 did is we scaled the monthly catch rates based on the mean 2007  
40 through 2015 ratio of fishable days, based on a Beaufort scalar  
41 of less than 5 and a Beaufort scalar of less than six. For wind  
42 speed, a Beaufort scale of 5 corresponds to a wind speed of  
43 seventeen knots, and a Beaufort scale of Beaufort 6 corresponds  
44 to wind speeds of about twenty-two knots.

45  
46 For the Scenario 4, for Beaufort scale of 5, if the wind speed  
47 registered in that particular area over that month was less than  
48 seventeen knots for X percent of days, that became the scalar,



1 and then, similarly, for the Beaufort scale of six. I will note  
2 that the Beaufort scale of six, if you like to think of things  
3 of from a fishermen's perspective, a scale of Beaufort 6  
4 corresponds exactly to a small craft advisory, and so if you see  
5 a small craft advisory go out, that means that the predicted  
6 weather for that day has a wind speed or sea state corresponding  
7 to a Beaufort 6.

8  
9 The next thing we looked at was wave height, as another way of  
10 getting at that Beaufort scalar. A Beaufort scale of 5, in this  
11 instance, would correspond to a wave height of two meters, and a  
12 Beaufort scale of Beaufort 6 would be a wave height of three  
13 meters.

14  
15 The first two approaches that I talked about, using the historic  
16 2004 to 2007 data, back when the federal season was longer, you  
17 can see that, early on, the Gulf is shown here as a black dashed  
18 line, and so that's the Approach Number 3. It's pretty much  
19 flat-lined early on, and so it says that the April and May time  
20 period have basically the same catch rate as June and July  
21 during that time period, and then it falls off a little bit at  
22 the end of the year.

23  
24 Then you can see what I was talking about with Mississippi here  
25 in green, how that's a little bit noisy, and you actually have  
26 higher, much higher, catches off of Mississippi early in the  
27 season and after the June and July time period, but the  
28 Mississippi total catch is pretty low, and so, once you combine  
29 things into the Gulf, it kind of swamps out that signal.

30  
31 For the weather data, I pulled data from NOAA data buoys that  
32 had historical archived wind speed and wave height data. This  
33 is from the National Data Buoy Center. It's available to the  
34 public online. I examined reef fish observer program data and  
35 reef fish bottom longline sampling data to get point-specific  
36 high catch areas for red snapper. Granted, that's commercial,  
37 but it's much higher resolution spatially than recreational, and  
38 that's to get a sense of where I should be looking for places  
39 that might be a proxy for where people would go to catch red  
40 snapper off of each state.

41  
42 Fortunately, that sort of corresponded with some of the only  
43 buoys that had historical time series for wind speed and wave  
44 height. There's not a lot of them out there that have data  
45 going back relatively far and also have kind of a comprehensive  
46 archived time series by month, and so you can see that we had  
47 three sites off of Texas. We had two sites off of Louisiana, a  
48 site off of Mississippi, a site off of Alabama, and two sites

1 off of Florida.

2  
3 Here is that Beaufort scale I was talking about, and so you can  
4 see a Beaufort scale of 5 corresponds to a wind description of a  
5 fresh breeze. The sea surface is described as moderate waves  
6 taking a more pronounced, long form. Many white horses are  
7 formed, and there is a chance of some spray.

8  
9 This scale was developed by an English military person who was  
10 coming up with a way of describing sea state in a rigorous and  
11 consistent way, and so a Beaufort scale of Beaufort 6 is a  
12 strong breeze, and you have large waves begin to form with white  
13 foam crest, extensive everywhere, and probably some spray.

14  
15 Going into the archived data from the buoys, you can see some of  
16 the buoys have data on wave height only, and so that's in green,  
17 and some of them have data on wind speed only, which is in red,  
18 and then some have data on both wave height and wind speed, and  
19 what you're looking at here is the monthly percentage of fishing  
20 opportunities relative to June and July, and so you're looking  
21 at a Beaufort number of Beaufort 6 in this instance, cut off for  
22 wind speed and wave height.

23  
24 When you combine that and average the various buoys within each  
25 state, you get kind of the shape you would expect. The weather  
26 is nicer for fishing in the summertime, and the weather is not  
27 so nice in the wintertime, but, when you look at a Beaufort  
28 scale of six, which is this graphic here, you can see that the  
29 percent differences, in terms of fishing opportunities, are not  
30 all that pronounced. You're really dropping only about 10  
31 percent of your fishing opportunities in those winter months,  
32 and really, in the months that the council is considering, that  
33 April and May time period, there is not a huge difference  
34 between June and July and April and May.

35  
36 Here is a really noisy, scary graphic, but I just wanted you to  
37 see all the different catch scalar scenarios that we looked at  
38 all in one spot, and so you can see the amount of variability  
39 that we tried to encompass.

40  
41 We've got all of these catch rate scalars, and these are the  
42 means and the 95 percent confidence limits across all of those  
43 scenarios. Then, on top of that, we have our ten catch rate  
44 scalars with their associated uncertainties. Before I show you  
45 the results, let's talk just a little bit about what we might  
46 expect to see. We might expect higher catch rates at the start  
47 of the season, due to an increased availability of the stock.  
48 People haven't been out there fishing on red snapper, and so

1 there might be pretty high CPUE to kick things off.  
2  
3 You might have weather impacting the ability of fishermen to  
4 reach those locations where they can catch red snapper safely.  
5 I know, personally, if I see the wind speed is going to be above  
6 ten or fifteen knots, I'm like, well, it's not really worth it.  
7  
8 Changes in red snapper catchability, you might expect, due to  
9 fish movement or behavior. Also, you've got scheduling  
10 conflicts. There is a lot of folks who, once school starts,  
11 it's harder to get out on the boat. I know that's the case for  
12 me. Once hunting season starts, there is many areas where folks  
13 are kind of more involved in that. Once football season starts,  
14 I don't want to go fishing on the weekend, because I've got the  
15 big game, and so those could all be factors that are difficult  
16 to account for, but may have a real effect on the season length  
17 you would expect outside of the June and July period.  
18  
19 Let's review some of the scenarios we're looking at and their  
20 strengths and weaknesses. The unscaled scenarios are a worst-  
21 case scenario that assumes no seasonal dynamic, and I think  
22 that's very conservative. The historic by-state and historic  
23 Gulf scenarios, those account for those high early-season catch  
24 rates, but they might underestimate late-season catch rates,  
25 because they are developed based on data from 2004 to 2007,  
26 which is prior to the rebuilding of the red snapper stock.  
27 There might be more fish out there. Maybe you wouldn't see this  
28 falloff of catch rates towards the end of the year now, because  
29 the stock is rebuilding.  
30  
31 The wind speed of Beaufort 6 and wave height of Beaufort 6  
32 scenarios do account for impacts of weather on fishing effort.  
33 I think Beaufort 6 might be overly conservative, and it also  
34 doesn't account for high early season catch rates, and so it's  
35 kind of got something going for it and something going against  
36 it, in terms of how predictive it might be.  
37  
38 A wind speed of Beaufort 5 accounts for the impacts of weather  
39 on fishing effort. It's less conservative, and it still doesn't  
40 account for what might be higher early-season catches.  
41  
42 Then those other factors that I talked about, such as changes in  
43 catchability and socioeconomic factors, such as willingness to  
44 participate in fishing activity, are generally expected to  
45 result in lower catch rates outside of the summer season, but I  
46 don't have a good way of modeling those. They are somewhat  
47 implicitly handled by the historic by-state and historic Gulf  
48 approaches, but not probably entirely.

1  
2 Here is the outcomes. These are box plots of the Split Season  
3 Option 1, season length in days by catch rate scalar, and then  
4 Split Season Option 2, catch rate in days for the federal for-  
5 hire sector by season scalar, and so you're looking at kind of  
6 the minimum and the maximum here, and so you can see the range  
7 of the outcomes that we had.

8  
9 The take-home messages would be that there is substantial  
10 variability across model runs. You've got a minimum season  
11 length of thirty-eight days, which corresponded exactly to the  
12 minimum season length that we came up with in June and July  
13 catch rate projection model. We found that the Beaufort scale  
14 of Beaufort 6 came out with results that were pretty darned  
15 similar to the unscaled approach. A Beaufort scale of 5  
16 predicted slightly longer second seasons, due to a lack of  
17 fishing opportunities as the weather starts to turn there in the  
18 October time period.

19  
20 The historic by-state and historic Gulf-wide scenarios were  
21 highly variable, but generally predicted much longer seasons,  
22 and that's because that second season really shows a falloff in  
23 catch rate under those scenarios.

24  
25 The way we computed or the way that the 2016 federal for-hire  
26 season was set was using the mean of the projected seasons under  
27 our model scenarios using the 2015 and 2014 data, and so it was  
28 not based on any of the regression runs that we did. The  
29 Regional Office took the mean of those two runs, based on the  
30 two most recent years, and came up with a for-hire season of  
31 forty-six days. Just for comparative purposes, if you applied  
32 the same logic -- I used the median here, because we're trying  
33 to look across seven scenarios now. Fifty days is our median  
34 for the 2014 and 2015 runs, for Split Season Option 1, and so  
35 that would give you four extra days. Then, under Split Season  
36 Option 2, the median would be forty-nine days, and so you would  
37 get an extension of your federal for-hire season of about three  
38 days. With that, if you have any questions --

39  
40 **CHAIRMAN BARBIERI:** Thank you for that, Nick. That was very,  
41 very informative. Are there any questions from the committee  
42 regarding Nick's presentation? Charlotte, would you mind  
43 putting up one slide, and I guess that's basically, Nick, your  
44 conclusions.

45  
46 **DR. FARMER:** Are you referring to this one or the one prior to  
47 it?  
48

1 **CHAIRMAN BARBIERI:** This one, just to keep everybody focused on  
2 what the general outcomes were and to see if folks have any  
3 questions or comments. It's a lot to digest, Nick, and so I'm  
4 just giving folks -- Steven.

5  
6 **MR. ATRAN:** I'm just wondering if it would be worth looking at  
7 east versus west separately. You said you were looking at  
8 individual states, but, since, for stock assessment purposes,  
9 this is considered to be basically two stocks, if that might  
10 make a difference.

11  
12 **DR. FARMER:** In terms of the catch scalars, we do have -- In the  
13 catch rate projection modeling approaches, there are many  
14 different catch rate and average weight projection scenarios  
15 embedded in there that do look at east and west as combined  
16 inputs, and so, for the base information going into them getting  
17 shaped by the seasonal scalars -- The information that is  
18 actually using what I would say is the fish in the water versus  
19 any other conditions that are impacting fishermen, we are using  
20 east and west in many of those scenarios. The seasonal catch  
21 rate scalars are more trying to deal with dynamics of effort,  
22 less so than dynamics of the stock.

23  
24 **CHAIRMAN BARBIERI:** Yes, John Mareska.

25  
26 **DR. MARESKA:** Nick, could you just kind of go over why you chose  
27 your Beaufort scales of 5 and 6?

28  
29 **DR. FARMER:** A small craft advisory, I looked at that as you've  
30 got to be a pretty bold recreational for-hire fisherman if  
31 you're going to take some paying customers out on a small craft  
32 advisory day, and so I looked at that as that's probably a  
33 pretty hard cutoff, in terms of fishing opportunities, but the  
34 Beaufort scale of 5 was the next step down on the scale, and  
35 that actually, for me, is kind of more like my own personal  
36 scalar of a cutoff. I think that corresponds to a wind speed of  
37 around seventeen knots or so. If it's blowing seventeen or  
38 more, there's no way I'm going out, even on a bigger boat.  
39 That's just not going to be a whole lot of fun.

40  
41 **DR. MARESKA:** That's exactly kind of what I was thinking, that 5  
42 would be the upper bound for most fishermen, and 4 would be a  
43 more accurate way to describe available fishing days.

44  
45 **CHAIRMAN BARBIERI:** Jack.

46  
47 **DR. ISAACS:** Your per capita GDP variable, was that inflation  
48 adjusted or was it just the nominal?

1  
2 **DR. FARMER:** It was inflation adjusted, and the details on that  
3 one are in the SERO LAPP 2016 04 report in your briefing book.  
4  
5 **CHAIRMAN BARBIERI:** Any other questions or comments for Nick?  
6 We are looking for a recommendation by the committee that this  
7 represents a valid methodology and receives our seal of  
8 approval, so to speak, if it's presented to the council or when  
9 it's presented to the council, that this has already been  
10 reviewed by the SSC and that we did not have any technical  
11 concerns with the analysis, as presented, and we feel that it's  
12 scientifically sound, so the council can actually know that this  
13 has already been peer reviewed, so to speak. Walter.  
14  
15 **DR. KEITHLY:** I have a technical question, Nick. On the slide  
16 for the east charter, the upper-left-hand graph, on the average  
17 weight, you have a mean of 7.45, yet, looking at the vertical  
18 axis, I don't see any observations that large. Am I misreading  
19 that?  
20  
21 **DR. FARMER:** The mean in that particular graphic, that's the  
22 mean projected, and so the 7.45 corresponds to the projected  
23 2016 mean, and then you have your confidence limits around it,  
24 and so it's just an easy way for me to ballpark kind of what  
25 sort of output I was getting from the regressions, so that I  
26 could see if they were resulting in something reasonable or  
27 completely off the wall.  
28  
29 **DR. KEITHLY:** Thank you.  
30  
31 **CHAIRMAN BARBIERI:** Okay, folks. Unless there are any  
32 additional comments or questions for the committee, I think we  
33 are ready to move on to take action on this agenda item. Sean.  
34  
35 **DR. S. POWERS:** **The SSC finds the analysis for the red snapper**  
36 **federal for-hire split season alternatives to be technically**  
37 **sound and suitable for management advice.**  
38  
39 **DR. ISELY:** Second.  
40  
41 **CHAIRMAN BARBIERI:** Thank you, Sean, and thank you, Jeff. We  
42 have a motion on the board. Now it has been seconded, and we're  
43 opening for discussion. I will give you a minute to reread it  
44 and think about it. Any potential suggestions or edits? Jim.  
45  
46 **DR. TOLAN:** This is actually just a follow-up technical question  
47 and not so much towards the motion. For the months in the wind  
48 speed and the wave heights, the month was actually aggregated

1 together, right?

2

3 **DR. FARMER:** Yes, and so what I did is I looked at -- The data  
4 coming in from there is either half-hour or hourly by day, and  
5 so then I look at the aggregate and how many of those instances  
6 are above the threshold versus below, and that becomes a total  
7 percentage of days that are available, and then I ratio that to  
8 the June and July time period, to get your kind of scalar.

9

10 **DR. TOLAN:** I just wanted to make the comment that one of the  
11 things we hear a lot off of Texas -- We get the 4, the 5, and  
12 the 6 conditions a lot, and so the recreational side, for-hire,  
13 is always asking for that late fall and winter season for the  
14 split season, because that's when they get the most paying  
15 customers. The winter Texans come down, and I think this is a  
16 really good way to approach that, and say this, economically or  
17 feasibly, may not be the best way to split that season, and so I  
18 commend the analysis.

19

20 **CHAIRMAN BARBIERI:** This is from Harry Blanchet. Please note  
21 that many of the more modern charter vessels are outboards,  
22 which probably have more limitations on sea state than the  
23 historic characterization. Harry, just so you know, Nick is  
24 nodding positively there, as in agreement with your statement  
25 there, but, before we get to that point, we had the comment by  
26 Jim that you wanted to address and then perhaps make a comment.

27

28 **DR. FARMER:** Yes, and I just wanted to make the observation that  
29 you can see what he's talking about on the percent fishing  
30 opportunities by month. The Texas line really kind of jumps out  
31 as Texas has more fishing opportunities later, beyond the June  
32 and July season. The best weather in Texas looks like it's kind  
33 of the August and September time period.

34

35 **CHAIRMAN BARBIERI:** Ben.

36

37 **DR. BLOUNT:** I have two very, very minor housekeeping items.  
38 The "for hire" should be hyphenated, and it should be  
39 "alternatives", if you will accept that as a friendly amendment.

40

41 **DR. S. POWERS:** Yes.

42

43 **CHAIRMAN BARBIERI:** Thank you, Ben. Nick, any comments or  
44 anything to add regarding Harry's comment about the outboards  
45 versus the inboards?

46

47 **DR. FARMER:** The two arguments that I'm hearing so far with  
48 regards to the weather both kind of suggest that the Beaufort

1 scale of 5 may be more on point than a Beaufort scale of 6 as a  
2 filter for kind of the maximum threshold for fishing for most of  
3 these individuals participating in the fishery, and so, in that  
4 case, that output is there on that final slide, and you have the  
5 season length.

6  
7 Also, with regards to Harry's comment, that would mean that the  
8 historic Gulf and the historic by-state might not be as  
9 applicable, if there have been substantial changes in the vessel  
10 composition of the fishery. Those two scenarios are so variable  
11 anyway that they kind of encapsulate the Beaufort 5 outputs.

12  
13 **CHAIRMAN BARBIERI:** Thank you. As you were talking about the  
14 Beaufort 5 versus the Beaufort 6, I saw both Jim and John kind  
15 of nodding in agreement very intensively. Okay. Any additional  
16 questions or discussions points regarding the motion on the  
17 board? Mr. Hanson.

18  
19 **MR. HANSON:** Thank you, Mr. Chair. Just a suggestion that if  
20 the council sees this motion and sees these scenarios and the  
21 discussion about which model runs may or may not be most  
22 suitable, I think maybe the SSC should weigh on which of these  
23 model runs would be more applicable for their management advice,  
24 for using in management scenarios, rather than keeping it wide  
25 open, because they could interpret that differently than what  
26 you suspect.

27  
28 **CHAIRMAN BARBIERI:** Let's review the motion. I think that the  
29 language is pretty explicit. Finds the analysis for the red  
30 snapper federal for-hire split season alternatives to be  
31 technically sound and suitable for management advice.

32  
33 Basically, what the SSC is doing is, instead of proposing or  
34 suggesting or evaluating any management alternatives, it's  
35 basically just reviewing the analysis, and so this is basically  
36 a technical review of the analysis, Chad. Okay. **If there are  
37 no other comments or questions, I am going to ask the committee,  
38 is anybody in opposition to this motion on the board?**  
39 Charlotte, I trust that you are monitoring the webinar-land  
40 folks as well.

41  
42 **MS. SCHIAFFO:** Nobody has objected yet.

43  
44 **CHAIRMAN BARBIERI:** Okay. **Seeing no objection to this motion,  
45 it passes. The motion carries unanimously.**

46  
47 Thank you, Nick. This was very intense, but very, very  
48 informative. This completes then Agenda Item X. We had already



1 gone through Agenda Item XI, and I will request Steven or Dr.  
2 Simmons whether there is anything else related to Agenda Item  
3 XI, the Review of the Updated SEDAR Schedule, that you think  
4 needs to be discussed by the SSC.  
5

6 **MR. ATRAN:** I don't think so. My only question would be, if  
7 Ryan is monitoring this, if there's anything that has come out  
8 of the SEDAR Steering Committee since yesterday that needs to be  
9 brought up.

10  
11 **OTHER BUSINESS**

12 **TERMS OF REFERENCE, SCHEDULE, AND PARTICIPANT SOLICITATION FOR**  
13 **SEDAR 50: BLUELINE TILEFISH**

14  
15 **CHAIRMAN BARBIERI:** Ryan, are you there? Dr. Simmons.

16  
17 **DR. SIMMONS:** I don't know if Ryan is there or not, but I did  
18 get an email this morning that the Steering Committee wants to  
19 convene a group of SSC representatives and other genetics  
20 researchers to look at blueline tilefish stock identification  
21 results before including the Gulf in the assessment.

22  
23 They are proposing that this group would provide recommendations  
24 to the Steering Committee, cooperators involved, and the  
25 Regional Office, staff at the Regional Office. Then they would  
26 make a decision on whether the Gulf would participate in SEDAR  
27 50, and Ryan is asking that the SSC also approve the terms of  
28 reference schedule and potentially nominate participants still  
29 for blueline tilefish, because that decision hasn't been  
30 finalized, because I don't think we did that yesterday.

31  
32 **CHAIRMAN BARBIERI:** We touched on it yesterday for a little bit,  
33 under Other Business, but we were really, to complete this item,  
34 waiting to hear any further direction from the SEDAR Steering  
35 Committee on whether this was going to go forward or not.

36  
37 Carrie, basically, if I understood you correctly, the SEDAR  
38 Steering Committee is requesting Gulf SSC participation as well  
39 as the assistance of other scientists that are involved in  
40 population genetics in the Gulf to help basically put together  
41 some evaluation or an evaluation on whether there is merit in  
42 pursuing a stock assessment of blueline tilefish under SEDAR 50  
43 that would include Gulf of Mexico -- That small portion of the  
44 stock as well. So there you have it. Any interest in members?  
45 Dr. Cass-Calay.

46  
47 **DR. CALAY:** I apologize for interrupting, Luiz, but I have a  
48 question, because we've already had a report from the stock ID

1 workshop, and we have already had internal discussions between  
2 Beaufort, Miami, and SEDAR, and it seems like a stock assessment  
3 that includes the Gulf is already underway, and so I may be  
4 incorrect. The SEDAR Steering Committee may be reconsidering  
5 this, but we are already preparing to provide the Gulf  
6 information to that assessment, which we believe will be led by  
7 Beaufort.

8

9 **CHAIRMAN BARBIERI:** Yes, Dr. Simmons.

10

11 **DR. SIMMONS:** If I may, I think the discussion at the Steering  
12 Committee was that there was still quite a bit of concern with  
13 including the Gulf in that assessment with the South Atlantic  
14 and the Mid-Atlantic. I read the stock ID report, and I think  
15 the discussion was there were only fifteen animals taken, and  
16 that was kind of a broad-reaching conclusion that there was no  
17 genetic difference and so we just include them.

18

19 There were also no animals taken from the western Gulf, and  
20 there is a small population, I believe, of blueline tilefish in  
21 the western Gulf, and so I think there was some concerns with  
22 the conclusions that were made, based on the work that was done.  
23 Now, I am no geneticist, and so I don't know if fifteen animals  
24 are plenty to make that kind of decision or not, but I think  
25 there were some concerns there with that.

26

27 Then there were also some concerns with how the fisheries are  
28 prosecuted. In the Gulf, we have tilefish under an IFQ program.  
29 Blueline tilefish is part of the IFQ program. The main species,  
30 I believe, is golden tilefish that's targeted, but it's all part  
31 of one group, and it's a very different management strategy, and  
32 that management strategy in the eastern part of the Gulf may be  
33 very different than the west too, and so there's all those  
34 moving parts going on, and so I think that's why they want to  
35 take a broader look at that. That's my understanding.

36

37 **DR. CALAY:** I really appreciate that you were able to listen in,  
38 because that encapsulates what our concerns were following the  
39 stock ID workshop, and so it does sound like those are being  
40 considered, as we speak, by the SEDAR Steering Committee, but we  
41 are prepared to provide the data that exist for the Gulf of  
42 Mexico, and we are prepared to provide a staff person, if  
43 necessary.

44

45 **CHAIRMAN BARBIERI:** Thank you for that, Shannon. Will.

46

47 **DR. PATTERSON:** To follow up with Carrie's comments, it seems,  
48 to me, in the stock ID report that there is not only a lot of

1 weight placed on these fifteen fish from the Gulf, but also the  
2 analysis that was done on it with the genetic data. Basically,  
3 they failed to reject the idea of a single panmictic stock, but  
4 that failure to reject -- Obviously the power is a real concern,  
5 with the number of samples, but even if there is enough gene  
6 flow that, using the couple of different types of markers that  
7 they utilized, there is not a significant difference among  
8 regions, that doesn't mean there is not significant stock  
9 structure or population structure that would indicate assessing  
10 and managing them as separate units is more advisable, and so it  
11 just seems to me like a lot was made out of a few samples  
12 without even considering this idea that failure to reject that -  
13 - There's lots of reasons that that could have occurred.

14  
15 **CHAIRMAN BARBIERI:** Valid points, and, Carrie, here is an idea,  
16 in thinking about this. Since the SEDAR Steering Committee is  
17 still meeting today, and they're going to have their report  
18 being produced and posted, released to the public, fairly soon,  
19 perhaps we can postpone discussion of this issue until our next  
20 meeting.

21  
22 By then, we're going to have a little more detail, perhaps, more  
23 explicit guidance, from the SEDAR Steering Committee, or would  
24 you rather -- If it would be to the best interests of the  
25 council to move faster, we can think about having this  
26 discussion back under Other Business.

27  
28 Just people know then that this sort of sub-committee or ad hoc  
29 panel is being put together and that we are asking for SSC  
30 members to participate, and we're going to be inviting some  
31 other population genetics specialists to help basically put  
32 together some sort of a white paper that would, in a more  
33 structured way, I guess, present a lot of these concerns that  
34 have been already raised. Shannon.

35  
36 **DR. CALAY:** I think Clay made this point at the SEDAR Steering  
37 Committee, but, as we develop these stock ID workshops, and  
38 there are others currently in the planning stages, we need to be  
39 sure we have data experts, as well as stock assessment experts,  
40 who do attend, and I know they did for the blueline tilefish,  
41 but we do need to make sure that the biological conclusions from  
42 the geneticists are actually achievable with the data that we  
43 possess, and that's a little bit tricky.

44  
45 **CHAIRMAN BARBIERI:** I agree, but have we actually -- I don't  
46 think we have seen the terms of reference for blueline tilefish.  
47 Have we, for SEDAR 50?  
48

1 **SSC MEMBER:** I haven't seen them.  
2  
3 **CHAIRMAN BARBIERI:** Okay, because, if we haven't, this is  
4 another way to address this issue, is for perhaps this SSC to  
5 weigh in on the terms of reference for that assessment and  
6 basically say, no, the geographic scope of this stock in the  
7 Gulf does not warrant its inclusion in SEDAR 50. Will.  
8  
9 **DR. PATTERSON:** I would also recommend that you send that report  
10 to maybe John Gold or Dave Portnoy or Mike Tringali and get some  
11 other opinions about the molecular evidence and what it actually  
12 means.  
13  
14 **CHAIRMAN BARBIERI:** Shannon.  
15  
16 **DR. CALAY:** Sorry to break in again, but the terms of reference  
17 are available on the SEDAR website, and they were finalized as  
18 of June 17, and so I can send them to Steven.  
19  
20 **MR. ATRAN:** We uploaded them to the file servers last night and  
21 today. They are Item 15(b), (c), and (d).  
22  
23 **CHAIRMAN BARBIERI:** Right, and that helps, Shannon. What I was  
24 thinking is those terms of reference have to be approved by the  
25 SSCs involved, and I was wondering -- Actually, this is under  
26 Other Business. The terms of reference are already included  
27 here, and so we are being asked to review the terms of  
28 reference, the schedule, and participants for SEDAR 50, blue-line  
29 tilefish. Why is this under Other Business?  
30  
31 **MR. ATRAN:** It was added after the Federal Register notice was  
32 finalized, and so it couldn't be a main agenda item.  
33  
34 **CHAIRMAN BARBIERI:** With the time, I don't know about all of  
35 you, but I am getting a little hypoglycemic here, and that's not  
36 a good place for me to be, and so I think that we can take a  
37 short break for lunch.  
38  
39 I am going to read a statement here regarding lunch that council  
40 staff asked me to remind attendees. Today's session will  
41 include a working lunch, which is paid for by the panel members,  
42 who will not have an opportunity to leave the meeting to procure  
43 food for themselves elsewhere. We ask that when lunch is  
44 delivered to the meeting room, please allow the panel members  
45 ample opportunity to obtain their meal. After they have served  
46 themselves, all others are welcome to take remaining food from  
47 the food and beverage area. Ryan, do you wish to address the  
48 committee? Go ahead.

1  
2 **MR. RINDONE:** I am ready whenever you guys are.  
3  
4 **CHAIRMAN BARBIERI:** Please go ahead.  
5  
6 **MR. RINDONE:** We can start with the terms of reference, if you  
7 would like, and so if you guys want to bring that up on the  
8 screen.  
9  
10 **DR. SIMMONS:** Ryan, we can't hear you. Can you speak louder?  
11  
12 **MR. RINDONE:** Can you hear me now?  
13  
14 **CHAIRMAN BARBIERI:** A little bit better, but not much. Are you  
15 feeling hypoglycemic, Ryan?  
16  
17 **MR. RINDONE:** I will just try to talk really loud then. If you  
18 can bring the terms of reference up for SEDAR 50.  
19  
20 **CHAIRMAN BARBIERI:** Yes, please do. Just for our internal  
21 coordination here, we are waiting for lunch. Lunch is on the  
22 way. It should be here any minute. That makes me feel a lot  
23 better. That will allow us to be in a much better mood to  
24 review the terms of reference, but please go ahead, Ryan.  
25  
26 **MR. RINDONE:** These terms of reference are your standard terms  
27 of reference that you guys have reviewed before. The  
28 jurisdictions listed would be edited to include the Gulf Council  
29 if the SEDAR Steering Committee moves forward with that. They  
30 have asked that there be an external review of the stock ID  
31 workshop proceedings to determine if the Gulf should in fact be  
32 involved in this assessment, but, in the meantime, the SSC would  
33 still need to approve the terms of reference, the schedule, and  
34 appoint some folks to attend.  
35  
36 The data workshop, assessment workshop, and review workshop  
37 terms of reference are -- Like I said, they're largely the same  
38 as they usually are. This first one, the stock structure and  
39 unit stock definitions, those are all things that were addressed  
40 by the stock ID group. Aside from the external review that's  
41 been requested by the Steering Committee, that part has already  
42 been completed.  
43  
44 **CHAIRMAN BARBIERI:** We have that report somewhere in our package  
45 of the outcome of this working group stock ID --  
46  
47 **MR. ATRAN:** It's one of the Tab 15.  
48

1 **CHAIRMAN BARBIERI:** Yes, it's one of the Tab 15.  
2  
3 **MR. RINDONE:** Right, and, with respect to that stock ID report,  
4 they used fifteen samples from the eastern Gulf of Mexico off  
5 the West Florida Shelf in their analyses, and they didn't  
6 discern there would be any break in the genetic stock structure  
7 between the eastern Gulf and the Atlantic.  
8  
9 However, there were no samples from the western Gulf, and the  
10 stock ID group acknowledged that they thought fifteen samples  
11 was a small sample size, but because they still had what they  
12 considered to be an acceptable amount of matching between the  
13 eastern Gulf and the Atlantic, they presumed there to be a  
14 degree of continuous gene flow coming from the eastern Gulf into  
15 the Atlantic, and so those are all things that would be  
16 considered later, when the external review of that report is  
17 completed.  
18  
19 With respect to the rest of the terms of reference here, again,  
20 for the data workshop, assessment workshop, and review workshop,  
21 they are all the same ones that you guys are used to, and so,  
22 Mr. Chair, I don't know if you want me to go through these  
23 point-by-point or if you guys can think of anything in  
24 particular you would like to see examined for blueline tilefish  
25 or how you would like to proceed.  
26  
27 **CHAIRMAN BARBIERI:** Thank you, Ryan. We will probably not need  
28 to go through each one of these terms of reference. We are very  
29 familiar with them. The committee is scrolling through the PDFs  
30 that came in our briefing book package, and so they will let you  
31 know if something comes up that they do not feel is appropriate  
32 or that needs addressing. The main question now, Ryan, is in  
33 relation to this inclusion of the Gulf, and it's still a point  
34 of discussion here. Will.  
35  
36 **DR. PATTERSON:** Ryan, I thought you just said a couple of times  
37 that there's going to be an external review of this stock ID  
38 workshop before the data workshop, and is that true?  
39  
40 **MR. RINDONE:** Yes, that's what the Steering Committee has  
41 requested at this point.  
42  
43 **DR. PATTERSON:** Are you soliciting members for that or do you  
44 guys know what the format or the procedure for that will be?  
45  
46 **MR. RINDONE:** I don't know an awful lot of information about it  
47 yet. I know that it will include some representation from the  
48 SSC and other people that the council or cooperator would

1 identify to participate, and so local folks with genetic  
2 experience would obviously be preferable, given that the thing  
3 that's tying the Gulf to the Atlantic with this is a low number  
4 of gene samples, and so, Will, I heard you mention a couple of  
5 people that you thought might be appropriate to be included in  
6 the discussion, and we've talked about some here in Charleston.

7  
8 There's some folks in this meeting in Charleston that we thought  
9 might be appropriate, and so the council will consider those,  
10 and we will put together this group from the Gulf to talk with  
11 the folks from the South Atlantic and the Mid-Atlantic, and that  
12 collective group will recommend something to the Steering  
13 Committee. I don't know when that's going to happen, though.  
14 That timeline hasn't been established yet. It would suffice to  
15 say the timeline outlined in the schedule will probably be  
16 modified.

17  
18 **CHAIRMAN BARBIERI:** Thank you, Ryan, and so I think this is  
19 clearer now that there will be an external review of this  
20 report, which will include a number of experts, primarily from  
21 the Gulf, that have experience with this, and we are being given  
22 the opportunity to participate in this review, and so any  
23 interest from the committee in participating? Will Patterson.

24  
25 **DR. PATTERSON:** Yes, I would like to participate, actually.

26  
27 **CHAIRMAN BARBIERI:** Kai Lorenzen.

28  
29 **DR. LORENZEN:** I would volunteer.

30  
31 **CHAIRMAN BARBIERI:** Any other volunteers right now? Will  
32 Patterson and Kai Lorenzen have volunteered to participate in  
33 this external review of the genetic analysis of blueline  
34 tilefish in the Mid-Atlantic, South Atlantic, and Gulf.

35  
36 **MR. RINDONE:** I will convey their desire to Mr. Gregory, and we  
37 will add them to our list of folks to consider to put forward.

38  
39 **DR. CHRISTMAN:** If you need a third, I would be glad to help  
40 out.

41  
42 **CHAIRMAN BARBIERI:** Thank you, Mary. We have three SSC member  
43 volunteers now to participate in this external review, and the  
44 terms of reference -- The schedule is to be modified,  
45 potentially, given some of the issues with the external review.

46  
47 **MR. RINDONE:** That's correct, and so, if agree with it as it is  
48 now, I would look at it more as you are approving the timeliness

1 of when things are going to occur, as opposed to the actual  
2 dates. SEDAR will, of course, work with the Gulf Council to  
3 make sure that you guys aren't trying to attend multiple  
4 meetings at once, because, as I can vouch for right now, that is  
5 particularly difficult.

6  
7 **CHAIRMAN BARBIERI:** Okay, and so we need approval of the terms  
8 of reference as they stand now, with the understanding that the  
9 stock ID component is to be updated after this external review,  
10 but the other items in the terms of reference for the data,  
11 assessment, and review workshops are just the standard items  
12 that we usually have there, and so any concerns on any of those  
13 terms of reference as presented? Seeing no concerns, Ryan, I  
14 think that the terms of reference are approved by the SSC, given  
15 the modifications that we have already discussed.

16  
17 **MR. RINDONE:** Okay. The schedule?

18  
19 **CHAIRMAN BARBIERI:** The schedule, any concerns from the SSC  
20 regarding the schedule, with the understanding that the dates  
21 are potentially to be modified, given the outcome of this and  
22 the timelines associated with this external review, but the list  
23 of items there and the locations for the workshops should stay  
24 the same. Ryan, if I understand correctly, this assessment is  
25 to be conducted exclusively by assessment webinars, or will  
26 there be an in-person stock assessment workshop?

27  
28 **MR. RINDONE:** There will be an in-person stock assessment  
29 workshop that will occur between the second and third assessment  
30 webinars.

31  
32 **CHAIRMAN BARBIERI:** Okay, and so we're going to have two  
33 webinars, assessment webinars, with an in-person assessment  
34 workshop in the middle, and then we're going to have an in-  
35 person data workshop and review workshop. Any concerns from the  
36 committee regarding the schedule as presented? Seeing none, no  
37 concerns from the committee. Ryan, I think this completes what  
38 you're looking for, in terms of SEDAR 50?

39  
40 **MR. RINDONE:** No, we still need participants.

41  
42 **CHAIRMAN BARBIERI:** Yes, I'm sorry. We still need participants  
43 for the actual three workshops. Will.

44  
45 **DR. PATTERSON:** If this moves forward and the decision is that  
46 the Atlantic and Mid-Atlantic should be treated together, but  
47 the Gulf not as part of that group, do you need Gulf SSC  
48 membership in these panels?



1  
2 **MR. RINDONE:** If that's what happens, then the people from the  
3 Gulf who have volunteered simply wouldn't need to be picked. We  
4 need this list of volunteers now, because the process of  
5 determining whether or not the Gulf is going to participate is  
6 something that would likely occur between this meeting and  
7 sometime, I would presume, in January, maybe, and so it would be  
8 better to have folks lined up ahead of time, in the event the  
9 Gulf does participate in SEDAR 50. We would be looking for six  
10 participants for the data workshop, three for the assessment  
11 workshop, and two for the review workshop.

12  
13 **CHAIRMAN BARBIERI:** Okay. Again, we are opening the floor for  
14 volunteers to participate in one or more than one of the  
15 workshops associated with SEDAR 50, blue-line tilefish, pending  
16 approval by this review panel of the genetic structure of the  
17 stock on whether the Gulf will be actually involved. We have  
18 Will Patterson and Joe Powers for the review panel.

19  
20 **DR. CHRISTMAN:** I can do data and assessment.

21  
22 **CHAIRMAN BARBIERI:** Thank you, Mary.

23  
24 **DR. ISELY:** I can do assessment.

25  
26 **CHAIRMAN BARBIERI:** Thank you, Jeff. We have Jeff Isely for  
27 assessment. Any other volunteers for the data workshop? I'm  
28 sorry, but did I hear that Harry Blanchet has volunteered for  
29 the data workshop?

30  
31 **DR. BLANCHET:** No, you did not.

32  
33 **CHAIRMAN BARBIERI:** Thank you, Harry. I was just trying to  
34 clarify that point. We don't want you to feel left out. I am  
35 not seeing any additional volunteers come up at this point,  
36 Ryan.

37  
38 **MR. RINDONE:** Thank you, sir. I will carry those names forward.

39  
40 **CHAIRMAN BARBIERI:** I think this completes the Other Business  
41 for Terms of Reference, Schedule, and Participants for SEDAR 50,  
42 blue-line tilefish. Our lunch is here, and so perhaps we can  
43 take just a short break to sort of grab our lunches and return  
44 to the table, and I think the plan is for us to have a working  
45 lunch.

46  
47 (Whereupon, the meeting recessed for lunch on September 21,  
48 2016.)

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September 21, 2016

WEDNESDAY AFTERNOON SESSION

- - -

The Standing, Reef Fish, Socioeconomic, Shrimp, and Spiny Lobster Scientific and Statistical Committees of the Gulf of Mexico Fishery Management Council reconvened in Tampa, Florida, Wednesday morning, September 21, 2016, and was called to order by Chairman Luiz Barbieri.

**DISCUSSION ON LIMIT AND TARGET REFERENCE POINTS AND MSY PROXIES FOR REEF FISH**

**CHAIRMAN BARBIERI:** We seem to have everybody in the room. I don't know about webinar-land. Are we ready? Okay. Thank you. Welcome back to the afternoon session, day two, of the Gulf SSC Meeting. Our next agenda item is Item XII, which is Discussion on Limit and Target Reference Points and MSY Proxies for Reef Fish. It has a number of sub-items, which I put together a brief summary presentation, just to help guide our discussion going forward.

You saw that I think there were a couple of different emails that I sent out recently with some additional discussion points and suggesting some potential next steps for your consideration, just to give you time to kind of think about some of those things before we got over here, but the idea here, and I have been trying to, and I take full responsibility for what's going to be discussed here or presented for discussion, but I have been trying to lean on Joe and Will and Bob Gill, because we had been discussing these issues informally as issues that we felt needed to have some SSC attention.

The idea then is twofold. One is we have this amendment that we've been asked to review. It's still in draft format, but it's to be finalized, but it basically sets the stage for specifying MSY proxies for council-managed stocks. As you probably realize, for a lot of our stocks, assessed stocks, we really, in most cases, cannot really come up with a credible estimate of steepness, and we don't have a good idea really, a good estimate, of the stock-recruitment relationship. Therefore, we are, in most cases, recommending reference points that are based on SPR proxies for MSY.

1  
2 Basically, we are, by definition, going into an SPR framework  
3 having to assume that we're going to have constant recruitment  
4 going into the future, because we don't really have enough  
5 information to understand the stock-recruitment dynamics there,  
6 and so we are missing a lot of the dynamic of the stock, from  
7 that perspective.

8  
9 One issue is to have a broader discussion than a proxy reference  
10 point. The proxy reference points that we have in place right  
11 now and the existing fishery management plans that have been  
12 approved by the council are fairly old. Most of that was set up  
13 way back then, during the Sustainable Fisheries Act. I think it  
14 was in 1986.

15  
16 **MR. ATRAN:** 1999 is when we did our Sustainable Fisheries Act  
17 Amendment.

18  
19 **CHAIRMAN BARBIERI:** Yes, and so the Sustainable Fisheries Act  
20 Amendment was approved in 1999, and so, given the  
21 reauthorization of the Act a few times since then, here is an  
22 opportunity for us to revisit some of those points and how those  
23 proxy reference points actually relate to a management framework  
24 that has actually been evolving over time, with the ACL  
25 framework and ABC recommendations that already incorporate some  
26 level of buffer.

27  
28 I thought it would be interesting for us to revisit and review  
29 this concept of target and limit reference points, these  
30 components of risk and uncertainty associated with the choice  
31 and estimation of reference points.

32  
33 The council is primarily responsible for setting a risk policy  
34 for managing the stocks, and we help them, from a technical  
35 perspective, but our involvement in developing management advice  
36 is mostly concerned with scientific uncertainty that we use for  
37 developing that buffer between OFL and ABC. The council deals  
38 more with management uncertainty, and we work together, kind of,  
39 in implementing the risk policy most explicitly associated with  
40 the P\* methodology that we have proposed and have been using as  
41 part of the ABC control rule, which has a probability of  
42 overfishing.

43  
44 Discussing that, the components of risk and uncertainty that are  
45 also associated with choosing MSY proxies, how much is too much  
46 and how much is enough, in terms of achieving MSY? Then, at the  
47 very end, discuss that, okay, if we want to continue this  
48 discussion, would it be advisable to put together an ad hoc

1 working group that would start digesting -- There is quite a bit  
2 of literature out there, some of it quite recent, and start  
3 digesting all of that and put together some kind of a white  
4 paper that would incorporate more of those technical  
5 underpinnings of those choices and provide a more structured  
6 framework for us to refer to regarding all the technical aspects  
7 that may not be so explicitly outlined in a regulatory  
8 amendment.

9  
10 I was in Miami, and I think that was last week, and maybe it was  
11 the week before, for a day meeting with Clay Porch and then, in  
12 the afternoon, meeting with the rest of the stock assessment  
13 group there. Unfortunately, Shannon happened to be away that  
14 day, and I couldn't have her included in this conversation, but  
15 the idea was to discuss this with the Center and invite them to  
16 be working more closely with us in developing this white paper  
17 and helping inform this framework.

18  
19 I also think it would be valuable to integrate some council  
20 input, some council staff, and the Regional Office folks to kind  
21 of put together something that's more comprehensive and  
22 integrate all the different dimensions of what it takes. By the  
23 way of introduction, that's what this -- This lines up with  
24 those items that you have on the screen.

25  
26 It lines up really with our action items or the list of topics  
27 for discussion in this Item XII of our agenda, and so I just  
28 wanted to give a little background, so people understand that  
29 this is more an introduction today for us to make a decision on  
30 whether we want to dive deeper into this issue and put together  
31 a working group and then develop this white paper that will have  
32 a lot more details, in terms of the technical issues, and that  
33 white paper can help inform a lot of the regulatory amendment  
34 that is in development.

35  
36 Why is this important? Of course, it has to do with the  
37 reauthorized Act and a lot of the provisions that are explicit  
38 in the National Standard Guidelines. In this particular case,  
39 councils must build into the reference points and control rules  
40 appropriate conservation of risk, taking into account  
41 uncertainties in estimating harvest, stock conditions, life  
42 history parameters, or the effects of environmental factors.

43  
44 It is advisable that the councils actually have an explicit risk  
45 policy in place for managing stocks and they can explicitly take  
46 into account the uncertainties associated with estimating  
47 parameters and estimating stock status and all the other outputs  
48 of assessments and that we, as their scientific body of

1 advisors, can actually play a role in providing guidance, from  
2 that technical perspective, and help them work together with  
3 them in achieving that goal.

4  
5 Does the SSC have a role to play? Our national Chief Stock  
6 Assessment Scientist, and this slide was presented back in 2010  
7 or 2011. The agency, National Marine Fisheries Service, put  
8 together a workshop that was the ACL science workshop back then,  
9 that was going to start discussing all the components that would  
10 be integrated into the National Standard Guidelines and would be  
11 sort of forming that underpinning, theoretic underpinning, for  
12 discussions on how the SSCs would be working in developing their  
13 ABC control rules and all the other scientific products that we  
14 evaluate and all the structure of our advice to the council.

15  
16 I thought that this was interesting, because it's part of that  
17 science/management flow idea that explicitly outlines our role  
18 in the process. Science informs development and evaluation of  
19 potential harvest policy. The council adopts the policy, which  
20 is the control rule, and codifies in the fishery management plan  
21 amendments. There is an annual implementation of policy  
22 according to the best scientific information available, and so  
23 we deal with this regularly, at each one of our meetings, as we  
24 evaluate the results of stock assessments and those products,  
25 and we provide that explicit advice to the council.

26  
27 This is interesting. Science does not decide the policy, and  
28 policy makers cannot make informed policy without the science,  
29 and so those are deliberately kept separate, but connected.  
30 There is a role for us and a role for the council. Please  
31 interrupt me if you have questions or comments. This is more to  
32 guide the discussion than anything else.

33  
34 Uncertainty, we know, is a big part of the equation.  
35 Calculation of reference points depends on knowing or assuming  
36 the nature of important biological processes, and we have there  
37 one of our demigods, Sidney Holt, saying the choice of the  
38 specific mathematical model has enormous consequences for  
39 management. However, there are rarely, if ever, sufficient data  
40 from nature to indicate which model is most appropriate. Some  
41 of these slides were mine and some were from Clay, and we kind  
42 of coordinated.

43  
44 There will be a follow-up presentation by Shannon that is going  
45 to be tying all of this more in terms of potential modifications  
46 to the control rule, our ABC control rule, but obviously there  
47 is a number of assumptions there that put us into this more  
48 explicit discussion of risk and uncertainty in the context of

1 fisheries management and the assessment process.

2  
3 Breaking down uncertainty, I think this is something that we  
4 discuss quite a bit, but not from the more theoretical  
5 perspective, perhaps, and I think it's valuable for us to have  
6 some of this discussion, because there is an informational  
7 content there that I think helps us move forward.

8  
9 Uncertainty can be broken down into these two components, the  
10 knowledge uncertainty, and this was not meant to be a slide by  
11 itself. If we push forward to the rest, but the idea here is to  
12 know that we have one component of uncertainty that is knowledge  
13 uncertainty, and that's really the things that we don't know  
14 about the stocks, about those biological processes and all sorts  
15 of things that happen, but that we can actually decrease that  
16 uncertainty by investing in additional either research,  
17 monitoring, data collection studies, all the stuff that we try  
18 to do to integrate into our scientific advice, and so that's  
19 knowledge uncertainty.

20  
21 There is another side of that that's just an inherent natural  
22 variability in some processes or populations or biological  
23 systems or ecosystems, and this natural variability is very  
24 hard, if not impossible, to control, and, in principle, it is  
25 irreducible. I think that this is important for us to be aware  
26 of, because the left side of this discussion there, on the  
27 knowledge uncertainty, is that uncertainty is actually  
28 information, to some extent.

29  
30 It lets us know the things that perhaps we can invest more, in  
31 collecting more information for, and try to reduce that part,  
32 but also recognize that sometimes, by collecting more  
33 information, we actually are just enhancing our ability to be  
34 more aware of the natural variability and that sometimes having  
35 more information actually leads to higher uncertainty, because  
36 the unknown unknowns become known unknowns.

37  
38 In a way, as we think about our recommendations to the council,  
39 in terms of developing a research plan and investments for the  
40 Center, in terms of data collection programs and all of this,  
41 this is something that is important for us to understand.

42  
43 Next is something that Clay, I think, brought up very explicitly  
44 that I think is a very good point, is how are we defining risk.  
45 The council is supposed to be adopting, developing and adopting,  
46 a risk policy for managing stocks, and they should be counting  
47 on us to provide assistance, if needed, on some of these more  
48 technical aspects that it's not easy for them to handle.

1  
2 We are considering risk here in the context of the probability  
3 of an event occurring times the consequence of that event. In  
4 this case, think about the risk of overfishing in our P\*  
5 framework, that we talk about this as the probability of  
6 overfishing, and, of course, the probability of overfishing for  
7 different stocks -- The economists here are probably already  
8 making that connection in their minds, but it also has to do  
9 with the cost associated with overfishing and the biological  
10 capacity of stocks to rebuild.

11  
12 Stocks that are more resilient to fishing have a lower cost,  
13 because it's not just that they may be more resistant to  
14 overfishing, but because they rebuild faster and easier, and so  
15 the costs associated with those is different. In this case,  
16 we're looking at the consequences that way, even though we're  
17 not integrating an explicit cost function into this discussion,  
18 but the higher the likelihood of an event happening and the  
19 higher the impact, the higher the risk.

20  
21 This ties us back into this target and limit reference points  
22 and this framework, and Clay and I, last week, discussed whether  
23 we wanted to go through some kind of the historical perspective  
24 of target -- I am not looking at you about historical. That was  
25 because Joe has some papers that look into this, the history of  
26 the development of this, that I thought was interesting, but  
27 that would be a little too much.

28  
29 The idea is that this framework was developed thinking about  
30 this risk and uncertainty sort of mindset, and so a limit  
31 reference point is a level of harvest that produces the maximum  
32 sustainable yield, according to our control rule right now,  
33 within the context of the Gulf Council management framework that  
34 we work with.

35  
36 We consider OFL as the limit reference point, and so that would  
37 be corresponding to MSY, that is supposed to be a risk-neutral  
38 reference point, meaning not risk-averse or risk-prone, but  
39 risk-neutral. As we read through more language in NS-1, we see  
40 that that is the recommendation, that this be a risk-neutral  
41 type of reference point.

42  
43 It reflects the perceived maximum degree of safe exploitation,  
44 and it is implicit that it should rarely be exceeded. In this  
45 case, we are thinking about this as more of a biological  
46 objective. My interpretation of this, and this is like some of  
47 these points of discussion, but I was discussing this with Clay  
48 last week. I was saying that my interpretation of this is it's

1 kind of like the E in my car's gas tank.

2  
3 I know that I still have ten or eight gallons in there, but it's  
4 time to find a gas station. It's telling me that. It's time to  
5 find a gas station. I am not at the bottom of the barrel, but I  
6 am very close, and going beyond that and getting onto a long  
7 bridge is not a good idea, and so it's just something that you  
8 avoid. It's a biological objective there.

9  
10 Now, a target reference point is a level of harvest that is set  
11 below, in terms of the harvest. The limit reference point is  
12 based on the ecological, social, and economic objectives of the  
13 fishery. For example, we have the optimum yield, and those are  
14 the targets that we are shooting for, and so those are part of  
15 an existing framework that is structured according to what we  
16 use, and that should help us guide some of our choices here  
17 going forward.

18  
19 Not coincidentally, NS-1 is a management framework and the  
20 advice in there is really based on a target and limit reference  
21 point framework. We have the OFL, and it is not coincidental  
22 that the catch would have a 50 percent probability of exceeding  
23 the true OFL, as determined by the stock assessment, and so  
24 that's the default risk-neutral characteristic of MSY or a limit  
25 reference point, that we have an ABC that is reduced below the  
26 OFL, and this is really to account for the uncertainty in the  
27 estimate of that OFL, and so we don't know where the true OFL  
28 actually is.

29  
30 We have an estimate for it, which has error, and so, by having a  
31 buffer between our estimate and a lower value, we build some  
32 risk-averse sort of mechanism for us never to exceed the true  
33 OFL, which we don't know where it really is.

34  
35 Then the council comes in and can recommend an ACL from that  
36 ABC. It can be lower or it can be at, but it's not allowed to  
37 exceed the ABC, and then the council also has the ability to  
38 specify an annual catch target, and so overfishing limit and  
39 annual catch target was deliberate in setting up this framework  
40 for target and limit reference points within our management  
41 framework that we work with, and, most often, this target is  
42 associated with optimum yield, or we think about it that way.  
43 We don't necessarily know what it is, but, in many cases, it is.

44  
45 Right there, you can see that the two roles that we talked about  
46 between the SSC and the council in generating this management  
47 advice and the fact that our role more explicitly is to handle  
48 scientific uncertainty in the determination of ABC and that the



1 councils integrate more the management uncertainty and should be  
2 the ones establishing the risk of overfishing. Within our  
3 control rule, we work with them and we make suggestions, but  
4 they don't have to accept those P\* values as representative of  
5 their true desire to assume risk for that specific stock.

6  
7 This is part of really a risk analysis framework that is  
8 associated with this whole process, and our ABC control rule  
9 contains components of both. There is a risk assessment  
10 component that is associated primarily with scientific  
11 uncertainty and all the science products that the SSC most  
12 directly deals with, and there is a risk-management component,  
13 which is really the policy side of all of this. It involves  
14 beyond just uncertainty. It involves actually preferences and  
15 values, and so there is things that we value more and less, and  
16 we evaluate the consequences differently, because of that  
17 probability times consequence component of risk.

18  
19 Our control rule, as it is now, has been a little confusing, and  
20 I remember, way back when, Claudia making that point, that it  
21 was a little confusing, because it integrates both a risk  
22 assessment and a risk management. We have managed to make this  
23 work by working together with the council and making sure that  
24 these two are handled properly, but they represent two different  
25 processes.

26  
27 Again, our ABC control rule, we don't need to go into details  
28 here, because we know this process. National Standard Guideline  
29 1 tells us explicitly to account for scientific uncertainty in  
30 estimating the true OFL. Of course, we don't know. It's a  
31 parameter. It's a Greek letter, instead of a lower-case Arabic  
32 letter, and so it is an estimate instead of the true parameter,  
33 and there is some error associated with that.

34  
35 To account for that uncertainty, we create a buffer between OFL  
36 and ABC, and we integrate it there because this represents a  
37 probability density there, that there is some probability  
38 associated with a catch going above that, and we can estimate  
39 some probability of overfishing. It's interesting that we  
40 haven't thought about it too much that way, and I don't know if  
41 the council has either, but species that are more susceptible,  
42 more vulnerable, to overfishing or they actually have a lower  
43 probability of rebuilding, should have a different probability  
44 of overfishing. The risk of that is fairly different, and we  
45 haven't really explored that too much. That's the reason for me  
46 to want to bring this up.

47  
48 We were talking about, for example, 30 percent SPR is a method

1 that we have been using quite commonly as a proxy for MSY. To  
2 me, to have something like 30 percent SPR for cobia or Spanish  
3 mackerel or red snapper or gag grouper and gray triggerfish is  
4 not scientifically logical, because, really, there is a  
5 component there of risk that is not being really explicitly  
6 taken into account, and those reference points will be  
7 different.

8  
9 Again, we have this unknown stock-recruitment relationship in a  
10 number of cases, not all of the cases, but a number of them, and  
11 MSY is then indeterminable. It doesn't mean, and I think we  
12 need to make this explicit also, because there has been some  
13 confusion from council members and stakeholders, that when we  
14 cannot estimate the stock-recruitment relationship that there  
15 isn't one, and that's not the case. The case is that we don't  
16 have enough information to estimate one, and so we don't know if  
17 one exists, but we just didn't have the data to go there.

18  
19 In that case, we go into a per-recruit analysis, and we really  
20 make a recommendation that is based on SPR-based reference  
21 points, and, right there, you can see the shaded area is the  
22 area that is most commonly assumed to represent MSY. In the  
23 past, a whole number of simulations and other studies have found  
24 that MSY actually is usually in this region between 20 and 40  
25 percent.

26  
27 Our very own Vice Chair gave a presentation to the council to  
28 this effect, at the council's request, that I thought was very  
29 informative. The council, at the time, was looking -- They had  
30 had this discussion several times, and the council was asking  
31 what SPR level is a good proxy for MSY, depending on what stock,  
32 and Joe -- I copied this literally from what was in his  
33 presentation, because I thought that this was all very relevant.  
34 It depends heavily on life history parameters.

35  
36 Using observations on other stocks and by doing many simulation  
37 analyses, scientists have found that FMSY is often the range of  
38 F 20 percent SPR and F 40 percent SPR. Therefore, in  
39 circumstances where FMSY is poorly estimated, scientists will  
40 use, for example, F 30 percent SPR as a proxy for FMSY.  
41 However, the choice of 30 percent or some other percentage  
42 depends upon the life history schedules for that species or  
43 stock, and this has to do with those biological parameters and  
44 the ability of stocks to either resist the impacts of fishing or  
45 the ability of them to react and rebuild the resilience, meaning  
46 to return to a normal state after disturbance.

47  
48 Then that leads us to, and it was as part of our reading list,

1 the Kindsvater 2016 paper that expands this whole discussion on  
2 life history traits and the compensatory capacity of stocks and  
3 how that relates with recommendations for reference points and  
4 recommendations for choices of proxy reference points.

5  
6 This is really just an extension of the r/K life history theory  
7 continuum of fast growth with early maturity versus slow growth  
8 and high longevity and late maturity and the vulnerability of  
9 different types of life history attributes or characteristics to  
10 fishing.

11  
12 Basically, the introduction was to lead us to this point and  
13 say, okay, sure we want to achieve MSY when choosing these  
14 proxies and ensure there is some degree of literature out there  
15 that provides some advice, but some of these things have been  
16 refreshed, and there is also a component of risk and uncertainty  
17 in choosing this, and this gets complicated with a third  
18 dimension of the life history attributes of species.

19  
20 This is really the point to open for discussion, is where do we  
21 go from here? We can initiate a more detailed discussion. We  
22 can go into development of a well-informed framework for  
23 choosing MSY proxies for Gulf Council-managed stocks. I think  
24 this would be a good way to go. We would develop a white paper,  
25 working with the Center and working with the council, council  
26 staff, and SERO, that would perhaps formalize, in one document,  
27 more of these scientific and technical underpinnings of all of  
28 these discussion points and let that be the main source of  
29 technical guidance for us in evaluating this plan amendment for  
30 the MSY proxies plan amendment.

31  
32 Do you want to establish an ad hoc working group to assist us  
33 with this task? That's another question. Also, how can we  
34 assist the council in developing a more explicit risk policy for  
35 managed stocks? Bob Gill has brought this up several times. We  
36 have made several attempts to do this, and, of course, it's  
37 something that we will have to reach out to the council and see  
38 if the council is interested in pursuing, but there are  
39 advantages in having the council go through this process, and we  
40 want to make ourselves available to assist with this.

41  
42 Then, because we have been, over this last ten years or more, so  
43 focused on MSY and so focused on a limit reference point,  
44 because our stocks were either already undergoing overfishing or  
45 were overfished and needed rebuilding that we have forgot about  
46 -- We have kind of forgotten about the other component of this,  
47 which is the target, and Will directly has brought this up  
48 several times in the context of potential modifications. We had

1 a presentation last year or the year before that talked about,  
2 well, maybe we can have an ABC control rule that already  
3 incorporates some of these target reference point types of  
4 attributes to help integrate that into the discussion.

5  
6 I guess the next one is really just a summary of the thirty-four  
7 stocks that are now, and this is just the finfish stocks managed  
8 by the council, and only ten have ACTs. Since we here ten years  
9 after the ACL rule recommendation in the last reauthorization of  
10 the Act, and the fact that we have a lot of stocks that have  
11 actually already been rebuilt or are in the process now, we  
12 might be ready to move into the next stage, where we are looking  
13 at a broader incorporation of optimum yield or some other target  
14 for management.

15  
16 The last slide is just so you get a feel for what stocks are  
17 managed now, we believe, by -- That have an ACT established in  
18 an approved fishery management plan.

19  
20 **MR. ATRAN:** Actually, we assigned ACTs to a whole bunch of  
21 stocks, way back when we were putting together the generic  
22 ACL/AM amendment. You remember we had that data-poor method of  
23 looking at recent years' average and then one standard deviation  
24 above is ABC, and some percentage below is ACL or ACT, but,  
25 although we have a bunch of ACTs, a lot of them don't do  
26 anything, because we don't have any accountability measures  
27 associated with them.

28  
29 These are the stocks where we do have some accountability  
30 measure. Either we are setting our closing date for the fishing  
31 season on when the ACT is projected to be reached, so that if we  
32 overshoot it that we won't presumably won't also overshoot the  
33 ACL, or we have some post-season measures, where if we do exceed  
34 the ACL next year that we set our quota based on the ACT. Those  
35 are basically the two main measures associated with ACT, but,  
36 like I said, we don't have them for everything. It's optional.  
37 I think some councils don't use ACT at all, and I think, even  
38 though we've had the generic ACL amendment in place for about  
39 four or five years now, we are still trying to feel our way  
40 through exactly how we're supposed to use these reference  
41 points.

42  
43 **CHAIRMAN BARBIERI:** Okay. With that, I will try to shut up and  
44 let you guys engage. If we go to the slide previous to that,  
45 that might give people some of the things that we may want to  
46 pursue.

47  
48 **DR. PATTERSON:** I really like this idea of the way you have

1 presented risk as a probability of something happening and  
2 multiplied by its cost or consequences and how, with the control  
3 rule really looking at the science side of it, as well as the  
4 management side of it and combining it into one context and the  
5 issues that that creates, but we're really combining two aspects  
6 of the management paradigm here, where first is what's a  
7 realistic proxy for where that overfishing threshold may be and  
8 then, once you have that, how do you ensure that the fishery  
9 doesn't operate in a place that would get close to causing  
10 overfishing?

11  
12 If we're able to estimate the spawner-recruit function, and we  
13 can estimate MSY directly, then we have estimated that  
14 parameter, but it seems like the biggest issue in front of the  
15 council that we keep getting feedback from them about isn't so  
16 much the control rule side of things, but what is a good proxy  
17 for MSY, and so that's the first component of all of this, and  
18 so it seems to me that we really need to kind of separate those  
19 two things out when we walk through how to give advice in this  
20 respect.

21  
22 **CHAIRMAN BARBIERI:** I agree completely. I just wanted to kind  
23 of, within that limit and target reference point structure, go  
24 following those NS-1 and NS-6 type of discussion points. It was  
25 really to bring it up, and you're going to see in Shannon's  
26 presentation following up that there will be some components of  
27 the same things that come up, because, really, the control rule  
28 is a separate step, but it's integrated into this.

29  
30 **DR. PATTERSON:** There is another aspect of risk that is not  
31 really part of this, what was presented here, and that is, when  
32 you pull on the economic side of things, the way the current  
33 system is set up is you have a threshold and then, based on  
34 scientific uncertainty, you establish a buffer.

35  
36 Then, based on management uncertainty, there is another buffer  
37 that could be applied, but one thing that hasn't really been  
38 explored, I think, as completely as it might be is what are the  
39 economic and social costs of yield foregone.

40  
41 I have just looked at a handful of the recent assessments, and,  
42 when you actually look at what the estimated Fs are after a  
43 stock that had been assessed and went through the control rule  
44 and we did the projections based on our control rule and set the  
45 ABC based on that, and then the council either set an ACL and/or  
46 an ACT below that, the F values that are being estimated are  
47 somewhere on the order of 0.6 to 0.65 of FMSY.

48

1 The staff at the Center could easily pull that out and actually  
2 look at what that distribution is, but, as an example, from the  
3 Restrepo et al., which Joe was a part of that exercise and the  
4 white paper they produced, they indicated that a sufficient  
5 target might be 75 percent of FMSY, and they talk about the  
6 implications of that for a range of different life histories.

7  
8 That was one of the simple control rules that we talked about a  
9 couple of years ago that the council might adopt, and so, in  
10 that case, and I remember the discussions at the council and  
11 presenting stock assessment results to them back in the days  
12 when the Sustainable Fisheries Act was first in place in the  
13 late 1990s and trying to get the council to move toward this  
14 threshold and target approach. At the time, for king mackerel,  
15 it was F 30 percent SPR versus F 40 as the target.

16  
17 There was some hesitancy and concerns about the full  
18 implications, and, understandably, it was a shift, but it was  
19 also some people thought that was too draconian. There's too  
20 much of a buffer. Well, now, looking at this system and the way  
21 it's operating, we've gotten used to it, but the buffer is much  
22 greater, as being applied in this case, at least as we've done  
23 it and the results of it in the Gulf.

24  
25 I really think, given especially the reconstituted SSC and the  
26 amount of social scientists and people with economics  
27 backgrounds that are here now, I would love to see some input  
28 and some ideas expressed about that aspect of things, which this  
29 has been really overlooked.

30  
31 **CHAIRMAN BARBIERI:** Dave.

32  
33 **DR. GRIFFITH:** I would just like to agree with what he just  
34 said, what Will just said. That's a very good statement, and I  
35 was actually going to ask whether or not, when you talk about  
36 the risk policy for managed stocks, if you're including the risk  
37 of say overregulation of certain species and what the pushback  
38 is going to be from commercial and recreational fishermen on  
39 those.

40  
41 **CHAIRMAN BARBIERI:** I just want to -- If you can go back, the  
42 idea here was to bring this up exactly as this discussion, that  
43 doing this unidirectionally is actually fairly easy, but, when  
44 you try to find that balance between yield and caution, that  
45 there are costs associated with both sides, and we are trying to  
46 find that sweet spot.

47  
48 It's just more difficult for us, I think, meaning non-economists

1 and non-social scientists, to sort of be able to delve into that  
2 more explicitly, and so, usually, I think our discussions have  
3 been a little lopsided, because they have been primarily guided  
4 just by the biological costs.

5  
6 **DR. J. POWERS:** Before we call on Shannon, I was going to make a  
7 comment. When I think of risk, I always think of the risk of  
8 what and to whom, and, once you get to the council level, the to  
9 whom is basically one of the big issues. Beyond that, I wanted  
10 to bring up the subject, and I'm not sure -- I haven't seen  
11 Shannon's -- Are you giving a presentation now? Are you going  
12 to talk about MSEs and stuff? Okay.

13  
14 One of the things is there's a national involvement in  
15 developing management strategy evaluations, which basically are  
16 sort of turning things around and saying, well, what kind of  
17 control rule will give you a reasonable probability of being in  
18 the good zone?

19  
20 You do that without having perfect knowledge about the stock.  
21 You assume things like steepness and then what happens when  
22 steepness is different than what we thought it would be and how  
23 robust is that management process, and I know there's a national  
24 impetus for this within the National Marine Fisheries Service,  
25 and I believe there are both national and Center-wide committees  
26 that are associated with that, and so, to me, if we do get  
27 involved in this sort of thing, we should be very cognizant of  
28 those efforts. Thank you.

29  
30 **CHAIRMAN BARBIERI:** Very good point. I have Will and then Ben.

31  
32 **DR. PATTERSON:** I think that's really what we need here,  
33 because, when we fix steepness, obviously we're determining what  
34 MSY is, but the corollary to that is if we're stating that the  
35 proxy is  $F_{30}$  percent SPR, that has an implied steepness with  
36 it, and so we need to examine it, and that's one way to do this,  
37 is to look at the resiliency of a stock and run it through  
38 simulations, given what we know about it, and do the management  
39 strategy evaluations and alter those assumptions and see what  
40 the implications are for the results of management and the  
41 assessment.

42  
43 **CHAIRMAN BARBIERI:** Ben, just one second, but, just to that  
44 point explicitly, because this was something that was very  
45 helpful last week at the Center. Some of you may have seen that  
46 email with Bill Harford's work, and so it's Meaghan Bryan,  
47 Skyler Sagarese, Bill, and there might be a couple more people  
48 there, but they have put together an MSE framework for a number

1 of stocks, and not just Gulf, but the South Atlantic as well  
2 that actually looks into this more explicitly.

3  
4 It's not completely cooked. It's one of those things that it's  
5 still in the oven, but reaching out to them last week, they were  
6 very interested in participating in development of this white  
7 paper and perhaps even developing something like a regional  
8 process for us to work with the Center in putting something  
9 together that's integrated with the SSC and the Center and that  
10 we help guide some of the questions and some of the management  
11 parameters there and the Center provides some of the analytical  
12 muscle, time constraints permitting.

13  
14 **DR. BLOUNT:** Just very briefly, I really like this discussion,  
15 for lots of reasons, and I think those of us in socioeconomics  
16 have struggled, particularly when we started, with developing  
17 the ACL framework, because we really couldn't see a way to bring  
18 socioeconomics into that very clearly, and the discussion here  
19 opens it up.

20  
21 The yield and caution can be looked at in terms of  
22 socioeconomics as well as biological parameters. You're careful  
23 about what the yield is, but you want to be cautionary, because  
24 you don't want to move toward overfishing, and certainly not to  
25 be overfished, but I just wanted to point out that we've  
26 actually had two discussions here at this meeting where these  
27 kinds of issues arise.

28  
29 One was with goliath grouper and trying to figure out -- That  
30 was why I asked the question of why are we doing a SEDAR on  
31 those, and the answers were very, very interesting. It's  
32 regional, and you're getting stakeholder feedback, all kinds of  
33 things that would go into rethinking how to come up with MSY for  
34 goliath grouper.

35  
36 I know this was a highly special case this morning, talking  
37 about the effort in the shrimp and so on and so forth, but the  
38 conclusion of that, essentially, was we have the caveats that  
39 you really need these economic parameters that will give some  
40 direction as to where to go with this, and I think those are  
41 both examples of the kinds of things that we're talking about.

42  
43 **CHAIRMAN BARBIERI:** Shannon.

44  
45 **DR. CALAY:** I can refrain and just make my comments during the  
46 presentation that I'm about to give.

47  
48 **CHAIRMAN BARBIERI:** You don't need to refrain, Shannon.



1  
2 **DR. J. POWERS:** She doesn't want to steal her own thunder.

3  
4 **CHAIRMAN BARBIERI:** Oh, you don't want to steal your own  
5 thunder. No, then don't. Yes, Steven.

6  
7 **MR. ATRAN:** First, this was a very good presentation. Although  
8 I don't agree with everything that's in it, it has generated a  
9 lot of good discussion. I just wanted to mention something.  
10 When Will was talking about -- I think it was him who brought up  
11 the social and economic costs. That has bothered me in the  
12 Magnuson-Stevens Act. Social, economic, and biological  
13 considerations are not all equal.

14  
15 The biological considerations, we have to avoid fishing greater  
16 than MSY. If we have an overfished stock, we have to rebuild  
17 it, and we have to rebuild it within a certain timeframe, but,  
18 when you talk about what about the socioeconomic considerations,  
19 one of the the main things that I can find, and I don't know if  
20 this is even mentioned anywhere else, is where it defines  
21 optimum yield. It says it's based on maximum sustainable yield  
22 as reduced by any relevant economic, social, or ecological  
23 factor. There is no hard objectives that we have to achieve  
24 with the social and economic considerations, but there is with  
25 the biological.

26  
27 **CHAIRMAN BARBIERI:** Right.

28  
29 **DR. BLOUNT:** If I could, National Standard 8 has some relevant  
30 information, but there are no standards in there. It just says  
31 these are things that you should look at, impacts on  
32 communities, for example.

33  
34 **CHAIRMAN BARBIERI:** Lee.

35  
36 **DR. ANDERSON:** I have a nit-picking point, and maybe it's really  
37 too much of a nit-picking point, but it can be important later  
38 on. On that curve there, you have the distance between 15 and  
39 40 percent labeled as P\*. Technically, that isn't P\*. I think  
40 P\*, what you mean it to be in this case, is 40 percent. The  
41 distance you have gone down is the tradeoff, and it's very much  
42 of a nit-picking point, but sometimes people look at these  
43 charts, and they come in and they say what is P\*? P\* is, the  
44 way I think about the problem, is the risk that you are willing  
45 to accept that you will have overfishing.

46  
47 **CHAIRMAN BARBIERI:** You are correct, and, fortunately, I have to  
48 say that this is one of the slides that I got from Clay.

1  
2 **DR. ANDERSON:** That's a cheap shot, but anyway -- If I can also  
3 say one thing, Mr. Chair. When you look at this thing,  
4 economists always talk about tradeoffs here, and so, really,  
5 what we're saying is -- I love it when you put this catch on the  
6 horizontal axis. You reduce catch, and that's the opportunity  
7 cost. That's what you're giving up. Then, but what are you  
8 gaining? You're reducing the probability of overfishing from 50  
9 to 40 percent, but what does that mean? It's very difficult,  
10 and you've got to remember that this is a continuous thing.  
11 It's not a yes or a no thing, but, when we start thinking of  
12 those tradeoffs, and we can do a lot better than that as we get  
13 into this, but -- Sorry, but I just had to --

14  
15 **CHAIRMAN BARBIERI:** No, don't apologize, and, Lee, let me put  
16 you on the spot here, because, a few years back, I saw you give  
17 a presentation, and I guess it was in the Virgin Islands  
18 somewhere, right?

19  
20 **DR. ANDERSON:** It was some boondocks, I'm sure.

21  
22 **CHAIRMAN BARBIERI:** Right, but I thought it raised some very  
23 good points, and so I would like to ask the socioeconomic  
24 members to perhaps put together something. It doesn't have to  
25 take a whole lot of time, and it doesn't have to be something  
26 that takes away from -- I think that it would be very  
27 informative for this committee to be able to work closer  
28 together, in a more integrated way, and for those of us who are  
29 very ignorant of all the socioeconomic factors and more of the  
30 technical issues as they relate to fisheries management.

31  
32 I personally would be very appreciative of something like that  
33 being brought. It could be a ten or fifteen-minute  
34 presentation, and it might be just to raise questions and  
35 generate some good discussion or recommend some reading. I  
36 think it would help a lot. Are you nodding yes?

37  
38 **DR. ANDERSON:** I would be happy to help, and I will try to keep  
39 myself from just making nit-picking points and try to make some  
40 regular ones.

41  
42 **CHAIRMAN BARBIERI:** Ben.

43  
44 **DR. BLOUNT:** It occurs to me that the idea of having the social  
45 people and the economists get together and work on this is  
46 justifying Doug Gregory's ideas about reorganization of the SSC,  
47 but I think it might even be helpful if we actually had a  
48 subgroup to put the economists and the social people to come up

1 with ideas, like Lee is talking about, and make a small white  
2 paper that might be informative from the point of view of what  
3 it is that we look at and what we think would be important in  
4 all of this. Thank you.

5  
6 **CHAIRMAN BARBIERI:** Will.

7  
8 **DR. PATTERSON:** I think Lee's comment about opportunity costs is  
9 really important here, because we're looking at this as  $P^*$ , but  
10 then there's another parameter that's been defined at  $P^{**}$ , which  
11 is basically the reduction then to get to the ACL, or perhaps  
12 the ACT. Obviously we're moving farther away from the median of  
13 this distribution. Therefore, we're increasing our opportunity  
14 costs as we go, and so I think that's really important to keep  
15 in mind.

16  
17 **CHAIRMAN BARBIERI:** At the risk of sounding like a South  
18 American dictator, and that wouldn't apply at all, but it would  
19 be great, Ben, if you perhaps, and Lee, for starters, but then  
20 integrate Walter and Ken and others to start thinking about a  
21 presentation, and Jack as well, but a presentation, perhaps for  
22 our next meeting, that would just give us a general introduction  
23 and frame it in terms of -- As Will just pointed out, frame it  
24 in terms of this explicit operational fisheries management, and  
25 I am thinking about that presentation that you gave before that  
26 was, I thought -- Half of it I didn't understand, but I liked it  
27 a lot. Steven.

28  
29 **MR. ATRAN:** Did you just put together a socioeconomic subpanel?

30  
31 **CHAIRMAN BARBIERI:** No, and I mean this is really just in the  
32 spirit of what I call kind of light assignment. This is to keep  
33 it kind of fun, where we will have some topics of discussions  
34 that will be brought up that will be informational and  
35 discussion-oriented for the committee. We like this  
36 integration, because it is enriching, I think, the scope of the  
37 discussions.

38  
39 **MR. ATRAN:** If we're going to have these folks informally get  
40 together, do you want me to go ahead and put something on the  
41 agenda for the next council meeting about a presentation, or do  
42 you guys want to think about it for a while?

43  
44 **DR. ANDERSON:** Yes, I would like it to be there, but I need a --  
45 I think Ken and Walter would agree that we need a little more  
46 direction on exactly what you're looking for and how much time.

47  
48 **CHAIRMAN BARBIERI:** Well, think about how often we meet and the

1 length of our meetings and the cost of our meetings and how many  
2 times have we discussed some of these issues, in terms of  
3 enhancing our ability to advise the council, and so I think that  
4 having a half-hour, thirty-minute, presentation and discussion  
5 and -- I mean, you guys are the experts on that side of the  
6 fence, and so this was really to set the stage from a poorly-  
7 informed, I would say, economical perspective, but to basically  
8 -- Going back to the second slide, this was trying to address  
9 primarily this issue that has to do with reference points and  
10 control rules, but there isn't a socioeconomic dimension of  
11 reference points and control rules, and perhaps educate us a  
12 little more on how you guys work with risk.

13  
14 How do you assess or how do you integrate all of this, and what  
15 kind of more explicit advice can be presented to the council,  
16 within the context of what we do here?

17  
18 **DR. ANDERSON:** If I was going to address that at all, given what  
19 I'm thinking here now, I would try to make it in terms of the  
20 sense that we ought to know what we're gaining when we give up  
21 catch, because it's a benefit/cost analysis. It's not a  
22 straightforward thing, but, if we are going to give us some  
23 catch, and we're going to get a reduction in the probability of  
24 overfishing, we have to have a better understanding of what that  
25 really means as far as overall welfare of the people who utilize  
26 marine resources.

27  
28 **CHAIRMAN BARBIERI:** In my opinion, that's the intersection that  
29 comes explicit between the biological and the economic, because  
30 then what we gain or what we lose, from an economic perspective,  
31 is related to the resistance of that stock to overfishing and to  
32 its ability to rebuild. If things are disturbed and they very  
33 easily return to a normal state, then the disturbances have  
34 little cost, and if we disturb something and it takes a long  
35 time, then the cost is higher.

36  
37 **DR. ANDERSON:** It's not just the reducing it to 50 percent  
38 overfishing, because it varies with the specific case, and it's  
39 good to know what that is.

40  
41 **CHAIRMAN BARBIERI:** In general, I think we can start directing  
42 it more. I think I have Jim and then Bob and then Ben.

43  
44 **DR. TOLAN:** Thank you, Mr. Chairman. This is a very  
45 enlightening conversation, and I very much like the presentation  
46 you put together, but it took a very different path than what I  
47 thought it was going to go down when you first started.

48

1 I am thinking about getting to the point of that OFL  
2 determination, and I thought you were going to recommend that we  
3 look at something other than SPR-based proxies for MSY when we  
4 can't get to MSY directly, but, again, getting to that point to  
5 factor in the economic side of it and to go from OFL down to  
6 ABC, and so are we still using the SPR-based proxies or are you  
7 recommending something different?

8  
9 **CHAIRMAN BARBIERI:** I think this is open for discussion. It's  
10 open for discussion. I am not aware of any other metric that  
11 can be used as a proxy, but I see Shannon raising her hand.

12  
13 **DR. TOLAN:** That was my natural next question, was, okay, what's  
14 it going to be?

15  
16 **DR. CALAY:** You took a little different direction than I  
17 actually expected also, and can you go back? I think one of  
18 your very first slides showed ABC, OFL, ACL, ACT, and it had  
19 colors. It was way at the beginning of the presentation.

20  
21 I have a tendency, perhaps, to take a very strict definition of  
22 things, and I think when we had our initial discussions about  
23 how to construct our ABC control rule that we were kind of  
24 following a stricter definition, which is that our ABC control  
25 rule only applies to scientific uncertainty, and that ACL, and  
26 the reduction for ACL and ACT, is where we would incorporate  
27 these ideas about economic considerations, et cetera. We could  
28 create some sort of single control rule that takes you from OFL  
29 all the way to ACT. Is that what you're recommending?

30  
31 **CHAIRMAN BARBIERI:** No, and I'm sorry that this is jumbled  
32 together in my already confused brain too much. Basically, what  
33 I wanted to talk about is that our role as SSC members -- We  
34 have different roles. Some are the roles that we apply to our  
35 control rule and the determination of ABC and the recommendation  
36 of the size of the buffer, and that is our control rule, but  
37 that doesn't limit us from providing advice to the council on  
38 some of these other issues that they may not be as familiar with  
39 and as comfortable, in terms of discussions that transcend just  
40 our ABC determination.

41  
42 Yes, our ABC control rule has some components and it involves  
43 proxies and it involves other things, but I wanted this  
44 discussion to generate multiple directions, and one of the  
45 directions was to get more explicit incorporation of the  
46 socioeconomic components right now and that we have more  
47 representation of socioeconomics and sociologists and  
48 anthropologists, and to also discuss the fact that the council

1 has been trying, as far as I remember, to develop a risk policy  
2 for ten years.

3  
4 We could assist, provide some assistance. It's not to do it for  
5 them and it's not to -- It's really just to be here and provide  
6 some of the technical, theoretical muscle there to help frame  
7 some of these things with them. I have now Bob.

8  
9 **DR. ANDERSON:** Can I just reply to something Shannon said? I  
10 don't want to start a fight here, but I would think that even in  
11 the ABC -- We had this discussion with Rick Methot one time,  
12 because, for a while, he was saying this is science and we're  
13 only going to reduce uncertainty, blah, blah, blah. Then some  
14 of us got into the discussion with him of on what basis are you  
15 doing this, and you are making tradeoffs, whether you want it or  
16 not. It's not just science.

17  
18 You are giving up catch, or at least I would make that argument,  
19 and I am prepared to take other ones, but I would say that the  
20 discussion about giving up catch should be part and parcel of  
21 setting ABC, and it's not just into the ACL. We can go further,  
22 but I just wanted to come back on that.

23  
24 **DR. J. POWERS:** I agree. Basically, the scientific role is to  
25 generate the shape of the distribution. Ultimately, what your  
26 perception of what is good and bad about where you are on the  
27 distribution is a personal one. It's not really a scientific  
28 one, and many people would argue that that really belongs to the  
29 council itself, in this context. In a sense, we've done that,  
30 because we've gone back to them to define what the P\* is, in  
31 some cases anyway.

32  
33 **CHAIRMAN BARBIERI:** Thank you. Mr. Gill.

34  
35 **MR. GILL:** Thank you, Mr. Chairman. I am going off on a  
36 different tangent than we've been discussing directly. I wanted  
37 to get into the timeline of what you're proposing. If you're  
38 okay with that, I will do it. If not, then --

39  
40 **CHAIRMAN BARBIERI:** I sure am.

41  
42 **MR. GILL:** It seems to me, first of all, and the discussion  
43 we're having today kind of reemphasizes talking about the  
44 timeline. First of all, back to where you started from, I  
45 agree. I think this is a discussion that this body needs to  
46 have, assuming that the council is interested in that  
47 discussion, and I support the ad hoc working group to help  
48 facilitate that, but, given this conversation and given the

1 duration and the time and the discussion it took us to deal with  
2 the ABC control rule, it ain't going to be a short conversation.  
3 It's going to be a long one, which says it's going to take a lot  
4 of different meetings over a very long timeframe.

5  
6 This has implications on the amendment that's being proposed,  
7 amongst other things, but your suggestion relative to the  
8 working group suggested a large working group, which would also  
9 suggest -- We may want to be thinking about ways to facilitating  
10 that, so that we don't get too mired down on all these diverse  
11 subjects, and you can see what we're having this afternoon as an  
12 example of that.

13  
14 I support that effort, and I think we need to go forward with  
15 it. I would be interested to hear what the council members say  
16 and what their perception of the council interest is in us doing  
17 that, because it's going to take a significant investment in our  
18 time, the working group time, the Science Center, all the folks  
19 that are involved, and we ought to do that knowingly.

20  
21 **CHAIRMAN BARBIERI:** Just to respond to Bob directly, I think  
22 that's spot-on, Bob. This was basically a basic presentation to  
23 start the discussion. The idea was not for this to be this is  
24 what it's going to be, but to let the committee take some of  
25 this structure and modify it as needed. Maybe we have two or  
26 three different paths that we can actually take in working with  
27 the Center on some of this MSE and just having them come back to  
28 us.

29  
30 Like, for example, Bill Harford and Arnold Gross, they come here  
31 once a year to give us an update on that MSE that has to do with  
32 the osmose and some of the ecosystem-based fisheries management  
33 framework that they are working on, and they ask us for advice  
34 and stuff, and maybe the Center people can come over and we can,  
35 on an individual basis, be more or less participatory offline in  
36 working on something, whether it be publish a paper or whatever,  
37 with them.

38  
39 At the same time, we could have something that's more cohesive  
40 there, more limited in terms of just the SSC, to start drafting  
41 some of the more practical, sort of technical, guidelines, for  
42 the amendment, thinking about the timelines involved. This was  
43 not to impose anything, but it's just to raise the issues that,  
44 having been involved in this process for quite a while, I keep  
45 seeing these issues resurfacing, especially at the council  
46 meetings.

47  
48 When I go and give presentations to the councils, a lot of these

1 issues resurface, and having sort of like a broad discussion  
2 here at our level and having something that we can put on paper  
3 that's a bit more structured could be helpful to guide our way  
4 forward. Will.

5  
6 **DR. PATTERSON:** I think that this is of great use to revisit  
7 this discussion, but we have revisited this discussion a few  
8 times a year since we were first required to come up with a  
9 control rule, and I think, to move forward, what we need to  
10 actually do is to set out a list of brief, but very direct,  
11 objectives for things that we think we need to do.

12  
13 When we first started down this road, we communicated to the  
14 council this idea that, given the way the guidance exists and  
15 the two sides, scientific uncertainty and management  
16 uncertainty, and where you get to the ACT, we talked about it  
17 being a collaborative process, and we have kind of deferred to  
18 the council to give us feedback for what they would like to see  
19 or what they would want.

20  
21 In doing so, we have sort of -- We've been, I think, perhaps too  
22 passive in suggesting to the council that, okay, we think this I  
23 where are some places that we can tighten this up and we can  
24 provide guidance to you in a better way than the current  
25 structure allows us to provide guidance to, and I think we  
26 really need to come up with some clear objectives.

27  
28 I mean, we've been circling this for a long time, and I think  
29 it's time to say, okay, we're going to keep what we have and  
30 just keep marching forward or actually propose some concrete  
31 changes in things to be evaluated, so we can move ahead and not  
32 necessarily look to the council to direct us in that respect,  
33 but to provide some suggestions to them of how we feel we could  
34 provide better guidance and scientific advice to them.

35  
36 **CHAIRMAN BARBIERI:** This is, again, like the point that Bob  
37 made. I think that's a very valid point. It could be a way  
38 forward, and it's always easier, I think, for the councils --  
39 Rather than completely starting from scratch, to have something  
40 in front of them that they can say, okay, now they can review  
41 this and they can actually push and pull and modify or make  
42 suggestions, but that we could put together that list, have a  
43 group put together that list, and then go forward there.

44  
45 **DR. PATTERSON:** Also, for the MSE folks in Miami that have been  
46 working on these different types of questions without much input  
47 from us or -- You mentioned that every so often we get somebody  
48 to come and give a talk and we're kind of picking it up cold and



1 that there's not this constant dialogue.

2  
3 I think perhaps we could come up with a short list of things  
4 that we would like them to examine and simulations to be run  
5 that could help us and then move forward on this instead of this  
6 sort of disconnect and operating without much knowledge of  
7 either group.

8  
9 **CHAIRMAN BARBIERI:** Steven.

10  
11 **MR. ATRAN:** I think there is two things, and maybe they're  
12 related enough that we shouldn't be treating them as two items,  
13 but one is the ABC control rule revisions and the other is the  
14 MSY proxies, and we have been working on the ABC control rule  
15 revisions for a long time.

16  
17 The SSC finally came down to a few alternatives for the council  
18 to consider, and that was about two years ago, and then things  
19 got put on the back-burner because we had high-priority items  
20 that kept coming up, and I think we're finally getting to the  
21 point where we can get back to this.

22  
23 One question is do we want to pick up where we left off, or do  
24 we want to start revising things again from scratch on how to  
25 set up the ABC control rule? The other thing, as far as the MSY  
26 proxies, is we haven't talked about that much. We had a whole  
27 bunch of special ad hoc committees back in the 1990s, when we  
28 first tried to do these. We tried to define all of our biomass-  
29 based reference points, in terms of SPR. I think it was static  
30 SPR, and they got rejected by NMFS at that time, and we never  
31 got around to trying to fix that until now, but we need to get  
32 these MSY proxies in, because they're required and because the  
33 stock assessment people need to have something on which to base  
34 status determination.

35  
36 As far as moving forward, we're really just coming back to  
37 revisiting this for the first time, other than for red snapper.  
38 Red snapper, you did evaluate a series of alternative SPR  
39 proxies last year, from 26 percent down to 20 percent, and the  
40 council has asked that that be reevaluated. That is one of the  
41 sub-bullets on here.

42  
43 If there is a recommendation that the proxy for red snapper  
44 could be changed, that's one thing I think the council would  
45 like to move on fairly quickly. The rest of these items, as far  
46 as trying to get MSY proxies for everything else, we can maybe  
47 take a little bit more deliberate approach with.

48

1 **CHAIRMAN BARBIERI:** Can we go to the next-to-last slide? I  
2 understand your point, and what we see here, we have seen that  
3 the Center has provided, as we have addressed or discussed, is  
4 looking at projections, different scenarios, under different  
5 SPRs, but it doesn't really evaluate the theoretical  
6 underpinnings of which SPR is the most appropriate, given the  
7 life history attributes and the compensatory capacity of those  
8 stocks.

9  
10 To me, those are two different topics, and I understand that,  
11 one, we're being asked to look at -- Should we look at it that  
12 way, to provide direction and advice to the council, but I think  
13 that we need to look at these different frameworks that kind of  
14 lean on life history theory to evaluate compensatory capacity  
15 and come up -- For example, last year, we had this issue about  
16 whether 30 percent SPR would be appropriate for gray  
17 triggerfish, which is a nest builder, with the male sex guarding  
18 the nests, and all sorts of life history attributes that seem to  
19 be very vulnerable and non-resilient to overfishing.

20  
21 We had the same SPR proxy level for a species that are  
22 hermaphroditic and harem versus gonochoristic species that  
23 have phenomenal resilience, and so, to me, those are the  
24 scientific underpinnings that are missing and that I think that  
25 we could delve into that, and, if it takes a year, and we can  
26 actually provide better advice that's more substantiated, I  
27 would feel more comfortable going that way.

28  
29 I agree with you in regards to the proxy MSY versus control  
30 rule. This is why those are in two separate agenda items and in  
31 two separate presentations. Clay, Shannon, and I coordinated,  
32 just because we wanted to make sure that we had those issues --  
33 They are related, but we wanted to handle them as two separate  
34 items.

35  
36 As a suggestion for us to move forward, between now and the time  
37 that we start putting together our report, I am going to lean on  
38 some of you to help outline some of these topics for discussion  
39 and some of the sort of action items, or a to-do list of items,  
40 that we want to address, as suggested by several people. I am  
41 going to be counting on the socioeconomic guys to be  
42 coordinating amongst themselves and bringing a presentation for  
43 the next meeting, and why don't we take a ten-minute break and  
44 then we can go to the last item with Dr. Cass-Calay.

45  
46 (Whereupon, a brief recess was taken.)

47  
48 **CHAIRMAN BARBIERI:** I was just informed, casually, that the next

1 presenter, who will be leading the discussion of this next item,  
2 needs to leave here at four o'clock, and she has seventy-six  
3 slides.

#### 4 5 **REVIEW OF ABC CONTROL RULE ALTERNATIVES** 6

7 **DR. CALAY:** Thankfully, there are not seventy-six slides,  
8 because that truly would be tedious. All right. This is  
9 actually a presentation that really only touches on the ABC  
10 control rule itself, and so I am not going to talk about  
11 reductions to ACL or ACT in the context of this presentation.  
12 This was developed by Clay Porch and I, and there are some  
13 additional materials maybe on the server that Clay sent, but I  
14 think a lot of it is duplicated here.

15  
16 This is the same slide that Luiz showed you, and it basically  
17 goes over the NS-1 guidance about these catch limits and who are  
18 the responsible parties. The overfishing limit and the ABC,  
19 that is handled through the SSC ABC control rule, and the  
20 determination of the ABC is defined as an SSC responsibility.

21  
22 The determination of annual catch limits, and that's the catch  
23 that invokes accountability measures, and the annual catch  
24 target, those can be set equal to ABC, but they cannot exceed  
25 it, and those are council responsibilities, and so this  
26 presentation won't address them at all.

27  
28 I did want to mention one thing, just to reiterate a slide that  
29 Luiz showed you, which was the slide that showed the SPR  
30 proxies, and so the overfishing limit is the catch that's  
31 expected at MFMT, which is either FMSY or a proxy, and, as Luiz  
32 showed you, there is a range of SPR proxies that we expect would  
33 be safe, in the sense of the biological characteristics of the  
34 animal.

35  
36 There are numbers below that range that really can't be  
37 described as SPR proxies anymore. They are levels that might  
38 actually achieve a higher yield, but that come at an additional  
39 risk of growth overfishing or of a stock that is not resilient  
40 to effects that are not described in the assessment model, such  
41 as environmental effects, et cetera, and so I do agree with Luiz  
42 that some further guidance on this is very necessary, and  
43 perhaps a committee to discuss these proxies and establish a  
44 white paper would be very useful.

45  
46 I am not going to talk further about the overfishing limit  
47 itself, but I am going to talk about the ABC control rule that  
48 would establish ABC. Again, this is just some guidance from NS-

1 1 about the ABC control rule. It's an agreed-upon procedure  
2 that is adapted in the FMP for setting the ABC of a stock or  
3 stock complex as a function of the scientific uncertainty in the  
4 estimate of OFL and any other scientific uncertainty.

5  
6 We were very strict in our initial ABC control rule in trying to  
7 only look at the scientific uncertainty, and this presentation,  
8 at least, continues in that direction, and so each council must  
9 establish an ABC control rule based on scientific advice from  
10 its SSC. The SSC must recommend the ABC to the council. The  
11 SSC is allowed to recommend an ABC that differs from the result  
12 of a control rule, but, if so, it must explain why.

13  
14 In data-limited circumstances, there are some additional  
15 flexibilities allowed by ABC control rules under NS-1 guidance.  
16 ABC control rules can also involve complex drivers, including  
17 uncertainty and forecasts of environmental effects, et cetera,  
18 and so our ABC control rule lightly touches on environmental  
19 effects, but it doesn't explicitly include them for all stocks.

20  
21 This is the general guidance now for ABC control rules  
22 nationwide, and so the general guidance says that an ABC control  
23 rule should consider actually reducing the fishing mortality  
24 threshold, or MFMT, as the stock size declines below MSST, and  
25 so if you see on this figure, there is a dashed-vertical line,  
26 and I apologize that I don't have a laser pointer, that is MSST,  
27 and I believe that I am about to get a laser pointer.

28  
29 **MR. ATRAN:** It's actually okay, because the people on the  
30 webinar can't see the laser pointer.

31  
32 **DR. CALAY:** I will avoid relying on it then. This vertical line  
33 is MSST in this drawing. Once you reach a stock size below that  
34 minimum stock size threshold, you would actually decrease F to  
35 some level. You could choose a critical biomass level, below  
36 which fishing mortality is fixed at zero. That is not shown on  
37 this particular figure.

38  
39 This is that same figure that Luiz stole from Clay that Clay may  
40 have stolen from someone else, and we're going to blame whoever  
41 created this figure, but, much like Luiz said, or identically,  
42 in fact, we reduce OFL by some buffer, which we establish using  
43 our tiers and dimensions table, to determine what  $P^*$  is, or the  
44 acceptable probability of overfishing.

45  
46 In this particular example,  $P^*$  is 0.4, and it's really a Western  
47 Pacific example, where they fix  $P^*$  at 0.4 and only worry about  
48 capturing the variability for their scientific uncertainty.

1  
2 A control rule may be used in a tiered approach to address  
3 different levels of scientific uncertainty, and so, in most  
4 cases, SSCs have a data-rich tier and then data-moderate tiers  
5 and data-limited tiers and perhaps catch-only tiers, like we  
6 have. The actual ABC control rules vary greatly by council, and  
7 so some councils have adopted a single framework for all their  
8 FMPs and others have different frameworks for each FMP.

9  
10 Most attempt, with various degrees of precision, to set their  
11 ABCs below the OFL in a way that reflects scientific  
12 uncertainty, but how they do it varies tremendously from one  
13 council to the other. Just as an example, which I will not go  
14 through in detail, this is the Western Pacific Fishery  
15 Management Council. Their control rule has five tiers, all the  
16 way from their very data-rich assessments down to data-poor  
17 assessments, and it looks very different than the Gulf control  
18 rule, but the intention is similar.

19  
20 This is our existing Gulf ABC control rule, and most of you are  
21 probably very familiar with it. We have Tier 1, which is our  
22 data-rich tier, and the condition for use is that we have a  
23 stock assessment which can provide MSY reference points and a  
24 PDF of OFL, and so sometimes we can estimate MSY, but we use a  
25 proxy.

26  
27 The choice of the  $P^*$  in the Gulf depends on the level of  
28 uncertainty from a risk determination table, and I am going to  
29 show you in a moment that that's our tiers and dimensions table  
30 that we use, and the tiers and dimensions table includes  
31 elements such as the level of assessment, whether it's an age-  
32 structured assessment or a production model, for example,  
33 whether the assessment uses proxies for FMSY, whether the  
34 assessment fully integrates the scientific uncertainty to  
35 project forward or whether we're relying on sensitivity runs to  
36 quantify scientific uncertainty, the severity of retrospective  
37 pattern, as you remove the most recent years of data, do you  
38 have a strong retrospective pattern that emerges, and whether or  
39 not there were environmental covariates considered in this stock  
40 assessment.

41  
42 I will show you that table, in case you're not intimately  
43 familiar with it, in just a moment, but the OFL, in this case,  
44 is the yield at MFMT. The ABC is yield at some percentile,  $P^*$ ,  
45 from the projection of MFMT or, in the case of an overfished  
46 stock, a projection of  $F$  rebuild, and this is the tiers and  
47 dimensions table. Most of you have probably already used it to  
48 develop  $P^*$ .

1  
2 Joe Powers and I are responsible for this beast, and I think, at  
3 least I believe, that it was a well-intentioned attempt, but it  
4 gives you an artificial -- It objectifies what is actually a  
5 variety of subjective decisions, and it hasn't actually proven  
6 to be very useful, in my personal opinion, although it certainly  
7 was well-intentioned.

8  
9 The other thing that is curious about the Gulf experience with  
10 that tiers and dimensions table is that our stock assessments  
11 typically produce very narrow PDFs, and so, no matter what P\*  
12 you actually select through that tiers and dimensions table, the  
13 actual reduction between OFL and ABC tends to be quite small,  
14 because the variance on our estimate of OFL is very small,  
15 typically.

16  
17 Moving on, we do have Tier 2, which was intended to be used for  
18 data-moderate assessments, such as DB-SRA, DCAC, or, perhaps,  
19 mean length estimators. We have not used this tier, to my  
20 knowledge, to date, and we are not certain that our data-limited  
21 assessments will function within this tier.

22  
23 We also have Tier 3, which is our recent landings only tier.  
24 Here, the condition for use, for Tier 3, is that you do not have  
25 a stock assessment, but that the stock, for Tier A, is unlikely  
26 to suffer overfishing if future landings remain similar to  
27 recent landings.

28  
29 That's Tier 3a, and so it's for our stocks that are not  
30 overfished and not likely to be experiencing overfishing. In  
31 that case, as you probably recall, OFL is set to the mean of the  
32 recent landings plus two standard deviations, and ABC is the  
33 mean plus one standard deviation.

34  
35 Tier 3B is intended to be for no assessment, but the stock is  
36 somewhat likely to be either overfished or experiencing  
37 overfishing. In that case, we set OFL at the mean of the recent  
38 landings and ABC buffered below, the default value being 75  
39 percent of OFL.

40  
41 You saw this slide, I believe, earlier, but maybe not. The  
42 calculation of ABC requires quantifying scientific uncertainty,  
43 and here is a little quote by Donald Rumsfeld basically saying  
44 there are things we know that we don't know, but there are also  
45 things we don't know that we don't know, and that's the harder  
46 thing to quantify.

47  
48 How do you quantify the scientific uncertainty? There are

1 essentially three different ways, that we could think of, at  
2 least, and so the first way is to try to estimate the variance  
3 of the PDF as part of eth stock assessment itself, and this is  
4 our current practice, but it often results in very narrow PDFs  
5 and a very small buffer between OFL and ABC.

6  
7 Another way is to estimate the variance external to the  
8 assessment process, and so you could either borrow it from  
9 another existing stock assessment or you could compute it with  
10 comparisons of estimates from multiple past assessments, and  
11 this is the Ralston approach. I sent that paper to Steven, and  
12 I saw that he posted it to the server, and so it's Ralston et  
13 al. 2011. Just to kind of briefly describe that approach, I  
14 will show you a few slides from that Ralston document.

15  
16 On the left-hand side, you will see a plot that is, I believe,  
17 about twelve former stock assessments of Pacific whiting, and  
18 they all have very different biomass estimates. These are the  
19 trajectories of biomass over time from all of their historic  
20 estimates of Pacific whiting, and what they do, essentially, is  
21 determine what the mean of those estimates is and then they  
22 calculate log scale deviations from that mean biomass for all of  
23 their historical assessments, and they do this and they combine  
24 it across all of their stocks as well.

25  
26 What you see on the right-hand side is the aggregate  
27 distribution of these log deviations pooled over seventeen  
28 different stocks, and then they fit a normal distribution to  
29 that, and I see it turned into an "S" for the PDF, but it's mean  
30 to say sigma equals 0.36, and so, in this particular analysis of  
31 Pacific stocks, they found that the average scientific  
32 uncertainty, they felt, could be described with a variance of  
33 about 0.36. In practice, our stock assessments that come out of  
34 SS have a CV much closer to 0.1. They are very narrow PDFs.

35  
36 This is rather complex, but, in the Pacific, they've got three  
37 tiers, and the three tiers are defined, but with that sigma of  
38 0.36 and then a sigma of 0.72 for their data-moderate and a  
39 sigma of 1.44 for their data-poor assessment tiers. As you P\*  
40 increases along this plot, you see that at the 50<sup>th</sup> percentile  
41 that it doesn't matter what your sigma is. All of those  
42 converge with no buffer between OFL and ABC, but, as you  
43 decrease your acceptable risk of overfishing, the buffer  
44 actually gets larger. The third way is to not try to estimate  
45 the scientific uncertainty, but just say that F at ABC, F ABC,  
46 is 75 percent of MFMT. We do love an acronym in this field.

47  
48 Now, there is some difficulty shoehorning data-limited stocks

1 into an ABC control rule, but NS-1 is currently under revision  
2 to provide greater flexibility to manage these data-limited  
3 stocks. For example, it, we believe, will allow alternative  
4 approaches to setting the status determination criteria when MSY  
5 cannot be calculated, but it will still require overfishing and  
6 overfished thresholds and related reference points like ABC,  
7 ACL, et cetera.

8  
9 Just to show you an example, this is a Caribbean stock, queen  
10 snapper. In this particular case, there is no time series of  
11 catch available -- Sorry. There is catch, but not effort. We  
12 have size composition data and limited life history data, and so  
13 we cannot directly calculate MSY or status determination  
14 criteria.

15  
16 However, if you're willing to set reference periods that you --  
17 Basically, you need a reference period. You need to estimate  
18 the average catch and fishing mortality for that reference  
19 period. Then, through a series of mathematical derivations,  
20 which I won't bore you with, you can determine two of the three  
21 status determination criteria.

22  
23 You can basically provide OFL, you can provide ABC through an  
24 ABC control rule, you can provide MFMT, if you're willing to use  
25 a proxy, such as FSPR 30, but MSST will still be unknown for  
26 these stock assessments, and you will see more about that when  
27 we get to our data-limited stock assessments. You will see what  
28 they are able to produce.

29  
30 How would we recommend moving forward? Now, again, I am only  
31 talking about the ABC control rule itself in this particular  
32 presentation, and so there are a few improvements that we think  
33 could be made to the Gulf ABC control rule. One is based on  
34 National Standard guidance, which is that you should reduce the  
35 fishing mortality as the stock size declines. Our control rule  
36 doesn't directly do that at the moment, although we do, when you  
37 get to an overfished status, require a rebuilding plan with a  
38 reduced F. In some ways, we are already reducing F, once you  
39 get into that overfished status, through the use of a rebuilding  
40 plan.

41  
42 Now, an open question, which we cannot advise you on, is whether  
43 if you did this modification to the ABC control rule and whether  
44 that would eliminate the need to create a rebuilding plan or  
45 not, whether this would mechanistically act in the same way that  
46 a rebuilding plan does, and we can't provide advice on that,  
47 because we're not lawyers, and so we would have to talk with  
48 General Counsel.



1  
2 If you believe that you must create rebuilding plans, then  
3 there's probably no reason to change the control rule to  
4 accommodate that Recommendation Number 1. If you think a  
5 rebuilding plan is required, then you wouldn't need to do that  
6 reduction in fishing mortality.

7  
8 There is a need though to improve Tier 2, we feel. Tier 2  
9 currently probably doesn't contain language that will allow us  
10 to use it for our data-limited stock assessments if they are  
11 accepted as best available science and useful for management,  
12 and so I will show you an example that provides us with that  
13 flexibility.

14  
15 The Tier 3 catch-only tiers, there is a concern that in some  
16 cases, and greater amberjack is an example, that our Tier 3  
17 control rule actually selects a reference period of time that we  
18 believe led to overfishing, and then we essentially say we're  
19 going to use that same reference period of time to create an  
20 ACL, and so the ACL may in fact perpetuate overfishing, and so  
21 there are some improvements that would reduce that likelihood.

22  
23 In any case, we do feel at least that there are rules of the  
24 council and SSC, and, to some extent, that should be preserved  
25 as we make these considerations, and so the councils, we feel,  
26 should determine the acceptable probability of overfishing,  $P^*$ ,  
27 and so we would actually recommend moving away from the tiers  
28 and dimensions table towards  $P^*$ 's that are derived by the  
29 council to incorporate their concepts about acceptable  
30 probability of overfishing, of course, with guidance from the  
31 SSC, and the SSC should concentrate on determining the magnitude  
32 of scientific uncertainty.

33  
34 This is the only pretty picture in this whole presentation. I  
35 just put some fish in to remind me that sometimes I do enjoy  
36 fish, but usually I just sit behind a computer.

37  
38 This is an example that we created. Actually, this is the  
39 current Caribbean Fishery Management Council ABC control rule  
40 developed by their working group in August. It has not been  
41 accepted yet by their council, but perhaps at the next meeting  
42 they will -- We hear that they want to accept it, but they need  
43 a little bit more information about how it functions.

44  
45 There is a lot on these slides, and I am only going to  
46 concentrate on how it differs from the Gulf, and the essential  
47 differences I have highlighted in red, for the most part.

48

1 Tier 1 is still a data-rich tier. It's a full stage-structured  
2 assessment with reliable information on catch, age, or length  
3 composition, indices of abundance, and the assessment provides  
4 an estimate of MSST, MFMT, and a PDF of OFL. In this case, the  
5 maximum fishing mortality threshold, or MFMT, is FMSY or a  
6 proxy, as it is in our Gulf control rule. We have changed here  
7 the MSST definition to 75 percent of B MFMT, which I think is  
8 consistent with many of the discussions that you've had here in  
9 the Gulf.

10  
11 Here, the only real differences are in how you determine the  
12 ABC. It does include some language that reduces the MFMT as B  
13 declines, and so that is what is highlighted here in red, is the  
14 mechanism that the Caribbean Council has recommended for  
15 reducing MFMT as B declines. They did actually include a B  
16 critical level, below which fishing would not be allowed.

17  
18 I think the only other nuance that I want to mention about this  
19 is that there are some comments here at the bottom, and Number 2  
20 is that MSST, for example, assuming that a spawner-recruit  
21 relationship is well estimated, we would use that definition.  
22 If it's not estimated, then truly it's undefined.

23  
24 Another important thing is this concept of sigma minimum, which  
25 is the minimum acceptable standard deviation set by the SSC, and  
26 so we actually recommended to the Caribbean Council, and,  
27 frankly, we're recommending to the Gulf, that you can use the  
28 assessment uncertainty, but there ought to be some minimum level  
29 that is defined, because some of our assessments, frankly, are  
30 not providing what we feel is a full representation of the  
31 scientific uncertainty, and so our buffers are very small  
32 between OFL and ABC. We think we could improve that by setting  
33 a minimum acceptable standard deviation. They get a little bit  
34 easier as we move on, thank God.

35  
36 The data-moderate tier now is only -- This now is for  
37 assessments using data-moderate approaches, where now two of the  
38 three data inputs exist, and see there is an error on this  
39 slide, but catch, age or length composition, and an index of  
40 abundance. You have two of those three things, and they are  
41 deemed informative by the assessment process and the assessment  
42 can provide a PDF of OFL, MSST, and MFMT.

43  
44 In this data-moderate case, some examples might be the mean  
45 length estimator, which we have extended to provide that PDF and  
46 OFL. In this case, it's exactly the same function as Tier 1,  
47 but now we increase that minimum variance to 1.5 times whatever  
48 you set as the minimum, because the principle is that there

1 should be more uncertainty with data-moderate approaches than  
2 there are with the data-rich approaches.

3  
4 The data-limited assessments, and this is what you're likely to  
5 see out of SEDAR 49, these we would apply this to relatively  
6 data-limited assessments or to assessments that are very out of  
7 date, and so you might pull an assessment off the rack from 2001  
8 and want to produce some sort of OFL and ABC recommendation, and  
9 so other councils have decided to put those into data-poor  
10 tiers, and the Caribbean Council chose to do that as well.

11  
12 Now your MFMT is a proxy. Essentially, you have to develop a  
13 proxy. In this case, F SPR 40 is an example. Your minimum  
14 stock size threshold is unknown. Your OFL is the catch at MFMT,  
15 and your ABC is determined from that OFL, as reduced by your  
16 scientific uncertainty and the acceptable probability of  
17 overfishing, and so now, in this case, your sigma -- Your P\* can  
18 remain the same, if that's what the council chooses to do, but  
19 your sigma -- Now we use two times whatever that minimum level  
20 was, which expands that PDF a bit, and so your P\*, the council  
21 can choose to change it or not, but we're handling the variance  
22 with that sigma min.

23  
24 Your ABC, and this is just the Caribbean's version, but they  
25 applied a scalar, and so it's a scalar times OFL, where the  
26 scalar must be less than or equal to 0.9, and so you're always  
27 reducing ABC from OFL in this Caribbean control rule.

28  
29 Tier 4 is our landings-only tier, just like our Tier 3. What  
30 we're asking them to do is essentially landings only plus any  
31 ancillary information, such as PSA, a productivity-  
32 susceptibility analyses, or expert opinion. Now your condition  
33 for use is that there is no accepted stock assessment, but that  
34 the stock is unlikely to be subject to overfishing and not  
35 likely to be overfished.

36  
37 Now, it's very much like ours, except the OFL here, rather than  
38 using the mean plus two standard deviations, they chose to use a  
39 scalar times the 75th percentile, and the scalar must be less  
40 than two, in their case. It's based on their perception of the  
41 degree of exploitation, the life history, and the ecological  
42 function of the animal.

43  
44 If they think it's not overfished, they can go as high as two  
45 times the 75<sup>th</sup> percentile, and the reason that they did this  
46 instead of two standard deviations above the mean is because  
47 their -- Well, catches, in general, can be quite variable, and  
48 when you have very variable catch history, sometimes two

1 standard deviations above that mean is a larger number than has  
2 ever been observed in the landings history, and they didn't want  
3 that to occur, and so they at least felt that this prevented  
4 that from happening, at least as frequently.

5  
6 ABC now is reduced, where the buffer must be less than 0.9.  
7 They also have a tier, which was intended for a stock likely  
8 subject to overfishing and/or overfished. Now, there is an  
9 issue with this particular tier, in that this would only apply  
10 to those stocks that you think you are still overfishing today.  
11 If you are in a situation where the stock is overfished, but  
12 overfishing is no longer occurring, this tier won't work for  
13 that, and so there is a caveat here. They probably need a 4c.

14  
15 In the case where overfishing is occurring, then their OFL is  
16 the mean of the landings times the scalar, and, instead of that  
17 entire reference period, they are only using the most recent  
18 three years of available landings, and their ABC is essentially  
19 just a reduction applying a buffer, where the buffer must be  
20 less than 0.9.

21  
22 This will prevent ABCs calculated from a period of time where  
23 overfishing occurred, is their thought. That's a theory, and so  
24 this is their version of Tier 4b. It probably requires a little  
25 bit more thought, but we do think that, in some cases, the Tier  
26 3b that we have in the Gulf could perpetuate landings that  
27 occurred during a time when overfishing was occurring, and so  
28 it's a very, I think, technical presentation, but I just wanted  
29 to give some food for thought as to how we could improve just  
30 the ABC control rule part of our control rule to prevent some of  
31 the hang-ups that have occurred when we have tried to apply some  
32 of these tiers in the last five or six years.

33  
34 Anyway, that's all I had prepared, and it's missing the  
35 component -- Well, it's not missing, but we have not spoken to  
36 the component of reducing to ACL and ACT, which is obviously an  
37 important area of conversation.

38  
39 **CHAIRMAN BARBIERI:** Any comments or questions for -- By the way,  
40 thank you, Shannon. I think that this was very good, very  
41 informative. You walked us through it very slowly through some  
42 of these points, and we get to see -- This is when you were one  
43 of our members, in developing our ABC control rule, and there  
44 were issues there that, at the time -- It's 20/20 hindsight, and  
45 so this is a way for us to perhaps improve what we have and add  
46 some of these additional features that might benefit our control  
47 rule, and so I appreciate you coming over and putting this  
48 together. Any questions or comments for Shannon? Joe.

1  
2 **DR. J. POWERS:** I will make a comment that I make continually on  
3 this subject, and that is that data-poor actually means  
4 something. The demand right now is to get these proxies in  
5 place, but, in my mind, the expectation is that there will be  
6 many misspecifications of these things, because we don't have  
7 data. That's the role of it.

8  
9 The issue is, once we go through this process and establish  
10 something, it's then -- To me, it's how do you know if you did  
11 screw up and then also how do you respond to that, and so I  
12 guess this is more for the council benefit than anything else,  
13 but this is not going to be a panacea. It's like you're saying  
14 scientifically that this is the best estimate of MSY.

15  
16 **DR. CALAY:** That's correct.

17  
18 **DR. J. POWERS:** But this is a process that gets you started, but  
19 you have to be aware that you need to revisit these things.

20  
21 **DR. CALAY:** I certainly agree. I think we have done some MSE-  
22 type simulations that some of you have seen, and we'll certainly  
23 show the full SSC when they are finalized, that show that these  
24 can function better than recent landings history alone criteria,  
25 but they function better also if you update them frequently, and  
26 one advantage of the data-limited procedures is that, once we  
27 make them more operational -- Right now, we're still in kind of  
28 a learning curve, but once they become more operationalized,  
29 they can be very easily updated to provide annual estimates of  
30 ABC, once we have a control rule in place, because, right now,  
31 there is no structure for determining how we would provide the  
32 management advice, and I think you heard a little bit on that  
33 yesterday, but the real questions are what is your frame of  
34 reference, in terms of the years you're going to choose to  
35 represent the landings history and whether the results that come  
36 out of these models are ABCs or OFLs.

37  
38 **CHAIRMAN BARBIERI:** Thank you. Steven, you had a question?

39  
40 **MR. ATRAN:** I think Will had his hand up.

41  
42 **DR. PATTERSON:** Thanks for the synopsis, Shannon. With respect  
43 to the P\* approaches, we have spent a lot of time through the  
44 years, and you have spent a lot of time here, considering  
45 different ways to estimate what the P\* should be, but obviously  
46 that's only one part of the deal. The other is the distribution  
47 itself, and so if we're going to use -- The variance that were  
48 coming out of the assessments that were produced in the Gulf

1 were so low that it makes the distribution so leptokurtic that  
2 it's kind of moot. We don't get much reduction.

3  
4 Then the Ralston approach is not really -- To me, it's not  
5 really a satisfying alternative, because obviously these are  
6 animals that don't live here and assessments that were done  
7 someplace else, but, on top of that, it only captures one small  
8 component of scientific uncertainty. I think we've spent so  
9 much time trying to make  $P^*$  work, and I'm just not sure that it  
10 does.

11  
12 **DR. CALAY:** I agree, and our conversations with the Caribbean  
13 Council -- We recommended that their council just determine  
14 their acceptable risk of overfishing and that be essentially  $P^*$ ,  
15 and that then we worry about creating that distribution, that  
16 PDF on OFL, and making sure that the variance is acceptable,  
17 but, in our conversations with SERO, they feel, or at least Roy  
18 felt at the time, that some consideration of stock-by-stock  
19 determinations of  $P^*$  were required, and so that's much more like  
20 our tiers and dimensions table, where you're actually looking at  
21 the attributes of each assessment individually and trying to  
22 determine  $P^*$ .

23  
24 Obviously there is still a lot of discussion about the best ways  
25 to determine  $P^*$ , but I agree with you, Will, that, frankly, it's  
26 a -- It is the council's selection. It's their risk of  
27 overfishing that they are willing to accept, and, frankly, if  
28 it's less than 50 percent, it's probably acceptable.

29  
30 **CHAIRMAN BARBIERI:** Yes, Will.

31  
32 **DR. PATTERSON:** I guess I didn't state this very well, but, to  
33 me,  $P^*$  is almost moot. It's the PDF.

34  
35 **DR. CALAY:** Right, and that's what I am agreeing with you about.

36  
37 **DR. PATTERSON:** Okay. Maybe I just didn't understand.

38  
39 **DR. CALAY:** It is moot, except that, as you get very close to 50  
40 percent,  $P^*$  of 0.5, it doesn't matter what you do with the  
41 distribution anymore. OFL equals ABC, and we want to avoid that  
42 situation, because that doesn't buffer at all, based on our  
43 scientific uncertainty, but, as long as there is a reasonable  
44 expression of  $P^*$  -- I mean, I think 0.4 is about right,  
45 honestly, but that's not based on much.

46  
47 Then you worry about characterizing the PDF on OFL, either by  
48 specifying what you think the minimum variation should be,

1 through some Ralston-like approach or through expert opinion or  
2 by a more complete analysis within our stock assessments of the  
3 potential sources of uncertainty than what has been done to  
4 date.

5

6 **CHAIRMAN BARBIERI:** Thank you, Shannon. Jeff.

7

8 **DR. ISELY:** I think I want to touch on the very last point that  
9 Shannon talked about, in that we are getting better at  
10 incorporating sources of variance, variability, in our  
11 assessments, and so Stock Synthesis, when we first got it,  
12 assumed both recreational and commercial landings were known  
13 exactly. They were census and not samples, and, since then,  
14 we've been able to incorporate variance into the model. At  
15 first, it was a single variance for the entire catch history,  
16 and now we're able to incorporate annual variances, or we will  
17 soon be able to incorporate annual variances.

18

19 A second point is that we're really starting to go after the MSE  
20 concept, and I think that can give us some additional source of  
21 expectations of what your risk of overfishing is in the future,  
22 instead of relying just on the PDFs of OFL that come out of the  
23 assessment.

24

25 **CHAIRMAN BARBIERI:** Very good points. Steven.

26

27 **MR. ATRAN:** I was going to mention that our Tier 3 control rule,  
28 it's not necessarily the most recent years of landings, although  
29 I think that's what we ended up using, and it's not necessarily  
30 ten years. I think we used eight years in a couple of  
31 instances, but it's supposed to be a period when there is no  
32 obvious trend, and I think, if we're successful in doing that,  
33 that sort of reduces the likelihood that you're undergoing  
34 overfishing. You would expect to see some downward trend if  
35 that was happening, and so we try to adjust it for that. That  
36 was the first thing.

37

38 Number two is we actually have a fourth level under there that  
39 nobody knows about, because we don't give it a tier name. We  
40 just call it a footnote. It says if you don't even have  
41 landings data that you are allowed to set ABC using expert  
42 opinion. It was written in case the SSC ever wanted to tackle  
43 that for something like goliath grouper, but it's never been  
44 used.

45

46 Then the third thing that I was going to talk about is, if you  
47 go up to Slide 4, where we talk about that line where the line  
48 slopes after you get under MSST, I think maybe an easier way to

1 achieve that than having a reduction in -- Well, I forget the  
2 way you explained it before, but probably the easiest way to  
3 achieve something like that is to say that when you are below  
4 MSST or when you're in a rebuilding plan that your MFMT is F  
5 rebuild instead of FMSY, and that solves a lot of problems.  
6

7 **DR. CALAY:** You are exactly correct. If we are under a  
8 rebuilding plan and we're using F rebuild, that is how you're  
9 reducing MFMT as stock size declines, and so you're correct that  
10 that's an equivalent. Now, if you wanted to move to an approach  
11 like this, which is used in certain councils, it's possible that  
12 we could avoid rebuilding plans. It's possible. I can't say  
13 whether it's -- I don't know. You would have to ask General  
14 Counsel, but it is used in other regions.  
15

16 **MR. ATRAN:** Yes, and that was actually in the Restrepo et al.  
17 paper that came out, and so I think that's where it originated.  
18

19 **CHAIRMAN BARBIERI:** Yes, Ken.  
20

21 **DR. ROBERTS:** Thank you, Mr. Chairman. I enjoyed the  
22 presentation. One of the slides said the council has the  
23 responsibility to come up with an acceptable probability of  
24 overfishing. The next line struck me, that the SSC should  
25 determine the magnitude of uncertainty. Have you got any  
26 experience where anyone else has tried to make that operational,  
27 the second part about the SSC's charge?  
28

29 **DR. CALAY:** Well, maybe I am addressing your question, and, if  
30 I'm not, let me know. I know that there are certain councils,  
31 like the Pacific Council, that have simply set  $P^*$  at 0.4, and  
32 then the SSC actually works on establishing the appropriate PDF  
33 on OFL, but  $P^*$  is always 0.4, at least in their Tier 1  
34 assessments, is my understanding.  
35

36 It's a little bit different concept than what we're doing here,  
37 where we're trying to -- Where the ABC is trying to use elements  
38 of scientific uncertainty to set  $P^*$ , which does beg the question  
39 of whether we are -- We had all of these initial experiences in  
40 our development of the ABC control rule, where we initially had  
41 some aspects of management uncertainty in that  $P^*$  calculation,  
42 and we chose to take it out and focus on the scientific  
43 uncertainty and move the reductions for ACL and ACT into tiers  
44 that I believe the council, and I don't know who else, and I  
45 apologize, that this SSC at least didn't create the ACL and ACT  
46 control rules. Those were developed predominantly by the  
47 council, is my understanding, and that's where the management  
48 risk comes into our framework.



1  
2 I have no direct experience with what I am proposing. I know  
3 that when we tried to present it to the Caribbean Council this  
4 way that they wanted a species-specific probability of  
5 overfishing based on biological criteria, which then kind of  
6 throws it back to the SSC. If that's what you want, then I  
7 guess the idea would be to develop P\* based on biological  
8 criteria and perhaps not assessment structure as much as ours is  
9 today.

10  
11 **CHAIRMAN BARBIERI:** Leann.

12  
13 **MS. BOSARGE:** I have a question. In your Caribbean Council  
14 example for the Tier 1 data-rich slide, you talk about B  
15 critical, and you kind of give a definition of minimum level of  
16 depletion at which fishing would be allowed. I'm sure if I knew  
17 enough about that equation right above it that I would probably  
18 understand what that meant, but can you can dumb it down for me  
19 a little bit? What is that minimum level?

20  
21 **DR. CALAY:** Absolutely, and I think that Clay actually sent me a  
22 slide with a better picture on it, which I forgot to include in  
23 this presentation, but, essentially, if you can imagine that at  
24 the minimum stock size threshold that you begin to reduce MFMT,  
25 and then, at some level of biomass, B critical, you set F at  
26 zero, because you think the stock is in such poor condition that  
27 fishing cannot occur.

28  
29 Usually, that sets something like 5 to 10 percent of the biomass  
30 at MSY, and so at some very low stock size, and it has not been  
31 determined yet by the Caribbean Council what that B critical  
32 would be. It's something they're still waiting for further  
33 information from their SSC.

34  
35 **CHAIRMAN BARBIERI:** Just as an example, the South Atlantic SSC  
36 has that level at 10 percent. If it is determined, for whatever  
37 means, that the stock biomass is at 10 percent of the virgin  
38 state, the fishery is closed, and it's supposed to set F equal  
39 to zero. Any other questions or comments for Shannon?

40  
41 I think that this sets the stage -- The most logical next  
42 question is do you want to establish or revive, and it's going  
43 to be like the phoenix rising from the ashes, our ABC control  
44 rule working group? Mr. Gill.

45  
46 **MR. GILL:** Thank you, Mr. Chairman. I think the answer to that  
47 is yes, but we also just talked about the MSY proxy group, and I  
48 suspect that trying to do both at the same time will be workload

1 problem, given all the other things that come along, and so I'm  
2 thinking that we probably ought to prioritize which one of those  
3 we do first, and get far enough along that we can free up enough  
4 time to work on the other, but I think both need to be done.

5  
6 **CHAIRMAN BARBIERI:** Good point. To that effect, I was thinking,  
7 since you made that comment, that one of the issues that Shannon  
8 brought up that I would say is the most urgent about our ABC  
9 control rule is how to adjust it and adapt it for this DLM  
10 procedure.

11  
12 Considering the fact that we're going to have the review  
13 workshop for SEDAR 49 coming up in November, and we expect to  
14 see a presentation to this committee probably sometime in  
15 January, perhaps that would be the first priority to be  
16 addressed. Shannon.

17  
18 **DR. CALAY:** I do agree with you, Luiz. We have already had some  
19 discussions about whether we could include our results, if  
20 they're accepted and deemed useful, under Tier 3, as a special  
21 case, and apply essentially a Tier 3 control rule. We can do  
22 that, if that's the decision of the group.

23  
24 Clay and I, at least, believe that having a tier of its own  
25 eventually would be better, because it does represent an  
26 improvement, we feel, from recent landings history, and so we  
27 prefer to have explicit tiers for recent landings history only  
28 and then for data-moderate assessments, which we think, at least  
29 in our MSE simulations, appear to be an improvement over recent  
30 landings history alone.

31  
32 **CHAIRMAN BARBIERI:** Steven.

33  
34 **MR. ATRAN:** Don't forget, and, Shannon, you had this in one of  
35 of your slides, that the SSC can recommend an ABC that differs  
36 from the result of an ABC control rule, but it must explain why,  
37 and so just because the ABC control rule, as currently written,  
38 might not accommodate the methods you're using for the SEDAR 49,  
39 it doesn't mean that the SSC couldn't still go ahead and say  
40 this is superior to any of the methods we currently have in our  
41 control rule for this set of stocks. That might be a way to see  
42 how this thing works before we write the instructions on how  
43 it's supposed to work.

44  
45 **CHAIRMAN BARBIERI:** Good point, and, to that point specifically,  
46 Shannon, I am familiar with that paper that Tom Caruthers  
47 published on applying some of these methodologies, but I haven't  
48 really started digging through a more detailed description of

1 those procedures. Is there something that you could send our  
2 way that perhaps can be in our library as a reference document  
3 to start learning more about those methodologies and sort of  
4 like the procedures and protocols that are integrated into those  
5 methods?  
6

7 **DR. CALAY:** Yes, we can certainly send some of our background  
8 documentation and also some of the communication materials we  
9 have developed that further actually simplify the concepts,  
10 because there are, I believe, fifty-seven methods, and there may  
11 be more by now, that are actually in the DLM toolkit, but there  
12 is only a handful that we're actually using for SEDAR 49,  
13 because the others don't perform well in simulations. We can  
14 reduce your workload by describing those models that are  
15 actually relevant to SEDAR 49, which is I think maybe six or  
16 eight models and not fifty-seven.  
17

18 **CHAIRMAN BARBIERI:** I think this would be very helpful.  
19

20 **DR. ISAACS:** There is also a draft document for the SEDAR 49 out  
21 in review right now, and it's available on the SEDAR website,  
22 and it goes through all of these procedures as well.  
23

24 **CHAIRMAN BARBIERI:** Thanks, Jack. That's going to be very  
25 helpful, just to sort of prepare us to have a better  
26 understanding before we get to that stage. In terms of the  
27 priorities here in moving forward -- The application of the DLM  
28 methodology and integration of those outputs and recommendations  
29 as they fit our ABC control rule, I am kind of trying to express  
30 some of the points that Clay discussed with me as something that  
31 he would like to see us proceed with, so there's more of that  
32 feedback between the control rule and the assessment results and  
33 vice versa, but it would be more informative to perhaps proceed  
34 with that after we see SEDAR 49, and so what is your pleasure as  
35 far as handling some of the homework that we have been assigning  
36 to ourselves?  
37

38 **MR. GILL:** At the start, it may just fall in naturally, because  
39 we will see SEDAR 49 in January. We will get the socioeconomic  
40 presentation in January, and, from there, we can make a  
41 determination of what the next step ought to be. Rather than  
42 just descriptively prescribe one now, we can wait until January  
43 and then say, okay, knowing this, this is the order in which we  
44 ought to proceed.  
45

46 **CHAIRMAN BARBIERI:** That sounds good, and let me just then ask  
47 Dr. Patterson to think a little bit about where this would fit.  
48 You mentioned earlier developing a list of criteria or specific

1 topics that could help us prioritize things or address things a  
2 certain way, and it would be nice to add this to the mix,  
3 perhaps under a different subheading. Some are more proxy of  
4 MSY, and others are more control rule adjustments, but I think  
5 it would be helpful for us to have something in front of us that  
6 we can work on, if that's all right with you, Dr. Patterson.  
7 For those on the webinar, I am getting a nod.

8  
9 Any additional questions or comments or points or suggestions  
10 for a way forward with this? Shannon, again, thank you so much  
11 for coming over and attending the meeting and giving this  
12 presentation. It was great to have you here for both days, just  
13 to see some of the stuff that happened yesterday. I don't mean  
14 to continue adding to your travel schedule, but we just love to  
15 have you here when you can be.

16  
17 It's something that I think it's -- Having you right there to  
18 provide some feedback to us instantaneously on some of these  
19 issues, and we know that we have Jeff Isely, but his hat here is  
20 more of an SSC member than a Science Center representative, and  
21 that helps keep those roles kind of separate, and so we just  
22 appreciate having you attend. Anything else, Mr. Atran, as far  
23 as -- I think this completes our agenda, and I am getting a  
24 positive and calm nod here. No?

25  
26 **MR. ATRAN:** No. I guess we have completed the discussion on  
27 reference points. On the ABC control rule alternatives, I had  
28 put some sub-options. I was going to go over the previous  
29 alternatives that the SSC had come up with. I don't know if we  
30 really need to do that at this time.

31  
32 However, the last sub-bullet there talks about carryover of  
33 quota underharvest, and it's put here to discuss within the  
34 context of how the ABC control rule might be changed to  
35 accommodate carrying over some unused quota into the next year,  
36 at least on a one-time basis, but, if Ryan is on the webinar,  
37 he's also working on an amendment to provide for quota  
38 underharvest, and he had provided a number of documents,  
39 including some questions to the SSC that would help him  
40 formulate an options paper for this item, and so is Ryan on  
41 right now?

42  
43 **MS. SCHIAFFO:** He's here.

44  
45 **MR. RINDONE:** I have a list of questions that I would like you  
46 guys to give a run-through and provide some feedback on. I am  
47 trying to get as many things answered on the front-end, before  
48 we start -- We can go ahead and open that list of questions, and

1 it's 13(e)-1b.

2  
3 Just to provide some background the council was interested in  
4 being able to carryover unused red snapper harvest, and this  
5 applies to both the recreational and the commercial sectors.  
6 They wanted to try to treat each of the players separately, if  
7 possible, and so the private recreational would be treated  
8 separately from the for-hire and separate from the commercial  
9 boats.

10  
11 The IPT went through some of the questions and just kind of  
12 prioritized things from a management standpoint, but there were  
13 some questions we thought pertinent to you guys, and so we can  
14 just go through those if you would like.

15  
16 The first one is since state recreational harvest efforts don't  
17 conclude until December 31 of each year, being that Texas has a  
18 year-round season, the final recreational data from the previous  
19 fishing year may not be available for quite some time, usually  
20 the end of April and -- How should the timeliness of landings  
21 data be addressed in order to establish a workable carryover  
22 system for the fishing year following a year where sector ACLs  
23 may not have been completely harvested? The SSC would need to  
24 revise the ABC to allow this carryover to happen, and so it  
25 would seem that you guys might have some opinion as to use  
26 preliminary landings or use landings that were known to be more  
27 absolute.

28  
29 **CHAIRMAN BARBIERI:** Ryan, to be perfectly honest, I couldn't  
30 understand anything you said, but I can see the questions right  
31 there on the board, and I guess everybody else as well. The  
32 first question for you, Ryan, is have you guys discussed this  
33 with SERO and legal counsel regarding specification of ABCs, the  
34 annual nature of those recommendations, and how to interpret the  
35 leftover as meaning of that interpretation for ABC  
36 recommendations?

37  
38 **MR. RINDONE:** We have as an IPT, and the IPT has some ideas  
39 about things like thresholds, where at least a certain amount of  
40 leftover should be available in order to trigger any carryover.  
41 For instance, just automatically carryover anything down to the  
42 pound, which would probably create an unworkable administrative  
43 burden, and so, from the standpoint of revising the ABCs, such  
44 that carryover could be applied, that's where the SSC would come  
45 in.

46  
47 **CHAIRMAN BARBIERI:** Ryan, I don't know if Nick Farmer is a  
48 member of this IPT, because it might -- Just because addressing

1 this question or questions might be easier for us if we have  
2 some examples put in front of us that we can actually consider  
3 or evaluate.

4  
5 **MR. RINDONE:** If you give me just a second, I will send you  
6 some.

7  
8 **MR. MALINOWSKI:** Luiz, e(2) has a list of the IPT meeting  
9 summary, and those draft actions that we reviewed at our IPT  
10 meeting are on there, and so you will see what we were looking  
11 at. When we were looking at those draft options, we came up  
12 with all these questions, and so that's where we're at in the  
13 process.

14  
15 **CHAIRMAN BARBIERI:** Right, and thank you. What I am thinking is  
16 if this could be structured as a PowerPoint, like we saw today  
17 for both the gray snapper tool, the decision tool for gray  
18 snapper, and the presentation that Nick put together for the  
19 other one, because it kind of walks us through those situations,  
20 and I think it would be easier.

21  
22 **MR. MALINOWSKI:** Ryan, we're having a hard time hearing you, and  
23 so if I say something wrong, step in. The thing here is, in  
24 terms of timeframes, is why we came back to the SSC to ask these  
25 questions. Basically, the council is -- It's red snapper, and  
26 so they're excited, and they want to get it done as soon as  
27 possible and review it, if there is alternatives that are  
28 possible.

29  
30 The thing about it is we were looking at, okay, the timeframe  
31 when we get the landings is at the end of the year. Can we  
32 implement a carryover to the new ABC that we're going to  
33 generate or is it going to stay at the same ABC? Can we get  
34 this done by June, when the season opens? These are questions  
35 that, before we move forward with anything else, we were looking  
36 just to get some generalities. I bet you we could go through  
37 this list in fifteen minutes and be done with it.

38  
39 **CHAIRMAN BARBIERI:** Perhaps you can do that, Rich. Just  
40 because, Ryan, it's hard to hear you. It would be easier to  
41 have somebody --

42  
43 **MR. RINDONE:** I'm in the airport, and so that might be part of  
44 it.

45  
46 **CHAIRMAN BARBIERI:** Can you, Rich?

47  
48 **MR. MALINOWSKI:** Sure. I can go through it. Basically, let's

1 look at this IPT meeting summary here first, or the actions we  
2 had up there. If you look at Action 1 on the board there, it's  
3 establish a carryover provision for unharvested red snapper  
4 quota for the commercial sector. If you look at the no action,  
5 no, we're not going to do that.

6  
7 Initiate a carryover of unharvested quota the following fishing  
8 year, and so that means we'll do it the following fishing year.  
9 Can we get it done in time for the beginning of the year?  
10 Probably not, and so you're going to implement it sometime later  
11 in the year, like midsummer or whenever we can get you guys to  
12 meet and tell us how you want us to proceed.

13  
14 The next alternative is, okay, what is the minimum percent of  
15 unharvested quota? If they harvest 80 percent of it, okay, do  
16 we want to roll that whole thing over, the 20 percent, or do we  
17 want to rollover 5 percent of the unharvested quota, and so  
18 that's Alternative 3.

19  
20 If you look at Alternative 4, the amount of carryover quota  
21 applied to the following fishing year. Instead of that whole 20  
22 percent carrying over, should it just be a percentage of that 20  
23 percent? Should it be all of it? Should it be 50 percent?  
24 There is a variance there because you are going to have natural  
25 mortality in there. You are going to have growth, and so those  
26 are things that we wanted to bring to the SSC, to say, okay,  
27 what are the data elements or the elements that we've got to  
28 take into account here?

29  
30 **CHAIRMAN BARBIERI:** Again, I think that if we had some  
31 projections over some time period that we integrate all these  
32 dynamics of the stock, because you are also talking about  
33 different cohorts that are undergoing all these different vital  
34 rates.

35  
36 I mean, depending on year class strength and the amount of  
37 recruitment that you get and whatever you might have -- This  
38 might be -- If we had some projections that looked at  
39 incorporating some of these criteria or points into those  
40 projections, I think it would be a lot easier. I have David and  
41 then Will.

42  
43 **DR. GRIFFITH:** I was just wondering if this would include  
44 regulatory discards, because I have heard that they have been  
45 going up under the IFQ system.

46  
47 **MR. MALINOWSKI:** That's a question we need to play in here.  
48 That's one of the questions we have for you guys. If you take -

1 - Instead of that whole 20 percent that's left over, if you take  
2 the 20 percent discard rate out of that 20 percent, and so you  
3 would wind up with 18 or 15 percent of the underharvest. I will  
4 assign Nick Farmer to do all of these projections. Why not?  
5

6 It's a lot of -- If you're going to do this, that's a lot of  
7 analysis, and that's why we were trying to sort of limit it down  
8 to do you want the whole thing to roll over or do you want  
9 natural mortality to be part of it and just that? There was a  
10 lot of things before we went to the next stage that we were  
11 trying to get answered.  
12

13 **CHAIRMAN BARBIERI:** I have Will and then Bob and then Shannon.  
14

15 **DR. PATTERSON:** Luiz makes a good point about what the age  
16 composition looks like and what the ratio of G to Z is going to  
17 be, but one thing you could do is just one minus M times the  
18 carryover as an amount and not as a percentage. Whatever the  
19 carryover is, one minus M, and so you're accounting for natural  
20 mortality and subtracting it off the top, and assuming the  
21 population is going to grow, and so then it would be a  
22 conservative estimate.  
23

24 **MR. MALINOWSKI:** That's the kind of direction we're looking for,  
25 Will.  
26

27 **CHAIRMAN BARBIERI:** I have been reminded here of a publication  
28 that came out in 2008 by one Joseph E. Powers and Elizabeth  
29 Brooke called "Penalties and Rewards for Over and Underages of  
30 Catch Allocations" that might have some of the sort of  
31 analytical --  
32

33 **DR. J. POWERS:** I probably shouldn't have, but now I have to  
34 defend it. In many cases -- It does some simulations that kind  
35 of shows that the contexts are, but, ultimately, it comes down  
36 to exactly those questions that are being asked. The devil is  
37 in the details of how quickly you can respond to changes and how  
38 you discount underages and overages and things like that.  
39

40 The other issue too that is not in this paper, but rather I  
41 guess would be a legal one, is, if something is overfished, can  
42 you legally give more -- If you have underages and it's  
43 overfished, can you increase those catches at that point? There  
44 is lots of details. Anyway, the paper was fun doing, and it  
45 gives a number of these issues that it kind of evaluates, but it  
46 really does come down to those questions of the practicalities.  
47 I can put it on the website or send it to you.  
48



1 **CHAIRMAN BARBIERI:** That would be great, yes. Steven.

2  
3 **MR. ATRAN:** To what Joe asked about of can you do it, you have  
4 done it in the past, but a little bit differently. Back when we  
5 had the 2010 BP oil spill, there was a tremendous underharvest,  
6 at least on the recreational side, of the red snapper  
7 allocation.

8  
9 In that case, the SSC got some preliminary landings, and I don't  
10 remember if this happened in January or a later SSC meeting, but  
11 the SSC came up with a new set of ABCs based upon revised  
12 projections from those landings. Now, in that case, it was a  
13 revised stream all the way out to 2032. What we would be asking  
14 here would be just can we give a blip for next year and then  
15 drop back down to our original rebuilding schedule, but it's not  
16 a whole lot different from what we did in 2010.

17  
18 **CHAIRMAN BARBIERI:** This may have really not been noticed by  
19 legal counsel, in terms of a rebuilding stock, but how that  
20 applies, but, one way or the other, I agree that if we get  
21 refreshed or fresh projections that integrate some of these  
22 stock dynamics, I mean just like what we do with all the other  
23 projections, it will be a lot easier for us to weigh in that  
24 way, because we can look at different scenarios. Will.

25  
26 **DR. PATTERSON:** We just talked earlier in this meeting about the  
27 danger of only putting in catch and rerunning a projection. We  
28 talked about some of the issues that arise with that. The thing  
29 that's important to remember is that we're talking about the ABC  
30 or the ACT here, and, at least for red snapper, that's been  
31 around 0.6 to 0.65. The F value with that, or the harvest rate,  
32 has been that much as a percentage of the FMSY, and so we're  
33 already buffered well below our threshold. It seems to me that  
34 a simple rule would be the most effective here.

35  
36 **CHAIRMAN BARBIERI:** Can you give an example?

37  
38 **DR. PATTERSON:** One minus M times what you didn't catch the year  
39 before.

40  
41 **CHAIRMAN BARBIERI:** Okay, and so we have a proposal for this  
42 carryover presented by Dr. Patterson.

43  
44 **DR. PATTERSON:** Another thing to consider here is that, if you  
45 think of mortality as size-based, and the champion of that is  
46 among us, then the mean natural mortality for red snapper is  
47 around 0.1, across its lifetime, but, for a small, young fish,  
48 that are mostly going to be part of this population as it

1 recovers, the M's are much higher than that. If you use the  
2 mean for the population, this is conservative in that respect as  
3 well.

4  
5 **CHAIRMAN BARBIERI:** Will, let me ask. The one minus M times  
6 what?

7  
8 **DR. PATTERSON:** Whatever you didn't catch the year before.  
9 That's yield foregone, and so that's biomass that is still in  
10 the population, but some percentage of that is going to die in  
11 that year, and so, if it's one minus M, you're subtracting out  
12 the removals due to natural mortality, but the population is  
13 also going to grow. It depends on where you are in the logistic  
14 function of the population, but, where we're most concerned is  
15 when the population is at or below its threshold value.

16  
17 At that level, growth should be greater than mortality for those  
18 age classes. The population growth should be at the exponential  
19 linear part of that curve, and so G is going to be much greater  
20 than M at that point, and so, if you use the one minus M, you're  
21 still being conservative.

22  
23 **CHAIRMAN BARBIERI:** So you think this would be kind of like a  
24 risk-averse rule of thumb that would kind of provide some  
25 minimal level of carryover without causing overfishing?

26  
27 **DR. PATTERSON:** It would be great to have the simulation  
28 approach, like in Joe's paper, but, looking at these numbers, I  
29 don't understand why you would only pick 5 percent or 10 percent  
30 or 35 percent to carryover to the next year. Those just seem  
31 arbitrary and low, given what we know about the mortality  
32 estimates for this stock.

33  
34 **MR. MALINOWSKI:** Will, I think you're mistaken there. That's a  
35 threshold that -- Say they caught 95 percent of it. Is it worth  
36 it to give them the 5 percent back?

37  
38 **DR. PATTERSON:** I've got you. I'm sorry. I did miss that.

39  
40 **CHAIRMAN BARBIERI:** Bob Shipp. Go ahead, Charlotte.

41  
42 **MS. SCHIAFFO:** We have a variable M by age. What ages would be  
43 used for the analysis?

44  
45 **DR. PATTERSON:** What I am saying is just the mean, which is 0.09  
46 or 0.1, whatever it is, and, that way, for smaller, younger  
47 fish, we would estimate it to be higher for those ages, but,  
48 this way, it would be a conservative approach.

1  
2 **CHAIRMAN BARBIERI:** Kai.  
3  
4 **DR. LORENZEN:** It wouldn't be conservative if you take the  
5 overage.  
6  
7 **DR. PATTERSON:** What I mean by conservative is that you would be  
8 leaving more fish in the population, because, if M is higher at  
9 those ages than 0.1, by using that ratio -- Let's say that the  
10 ages over which most of the fishery is being prosecuted that the  
11 M is an average of 0.3, but you're taking 90 percent then in --  
12 You're right. It would be the opposite. I understand what  
13 you're saying.  
14  
15 **CHAIRMAN BARBIERI:** But it would have to be for the fully  
16 recruited, or at least the recruited ages, right? They are  
17 recruited into the fishery, plus --  
18  
19 **DR. LORENZEN:** It should represent where the bulk of the catch  
20 is taken.  
21  
22 **CHAIRMAN BARBIERI:** The harvest, yes, but we will have to take  
23 into account also some recruitment of the pre-recruit mortality  
24 and growth of the pre-recruits, because they are going to add --  
25 Two-year-olds this year become three next year.  
26  
27 **DR. LORENZEN:** If you just go with mortality and you get the  
28 mortality rate for the age composition that you are catching,  
29 then that's conservative, because it doesn't account for growth  
30 and recruitment, but, if you account for everything, then it's  
31 really no different from rerunning the projection.  
32  
33 **CHAIRMAN BARBIERI:** Okay. Steven had a comment or a question.  
34  
35 **MR. ATRAN:** I was just going to suggest that an example of what  
36 Will is talking about is let's say red snapper was  
37 underharvested by the recreational sector by 500,000 pounds.  
38 Using his formula, with a natural mortality of 0.1, that would  
39 be 450,000 that could be carried over to the next year's ABC.  
40  
41 **CHAIRMAN BARBIERI:** John Mareska.  
42  
43 **DR. MARESKA:** We were talking about mortality, and I was just  
44 thinking if that unharvested amount, if it was actually subject  
45 to fishing, to be harvested, how much discard mortality would be  
46 associated with it? Is it kind of a wash with the additional  
47 mortality that we're trying to pull out for the carryover, from  
48 a science standpoint? Most of this just looks like it's a

1 management concern, to me.

2  
3 **DR. TOLAN:** That's why I think the Alternative 3, which was just  
4 briefly touched on, I think is really important. How big of an  
5 underfishing carryover does it have to be to really make any  
6 difference? I think the simulation would really come in handy,  
7 because if it's 3 percent or 5 percent or 8 percent, who cares?  
8 I think the simulation would be really helpful there.

9  
10 **CHAIRMAN BARBIERI:** Mr. Hanson.

11  
12 **MR. HANSON:** Thank you again, Mr. Chair. Chad Hanson with the  
13 Pew Charitable Trusts. There is an ACT control rule that has a  
14 20 percent buffer on this fishery, and my understanding is this  
15 carryover would apply to the ACL. If they're over their ACT and  
16 under the ACL, a carryover could be applied.

17  
18 Another way to crack this nut would be to look at the control  
19 rule and the buffer for the ACT, and I know that's out of you  
20 all's purview, per se, but that's another way around this or  
21 another way to -- That control rule is supposed to function as a  
22 buffer.

23  
24 As they reduce the number of times they go over it and reduce  
25 that magnitude and the data improves and such, that buffer, in  
26 theory, and in practice, if you apply it every year, could be  
27 reduced, using that control rule, and so that's another way that  
28 could be looked at, and maybe we're overthinking this a little  
29 bit too much.

30  
31 **CHAIRMAN BARBIERI:** Will.

32  
33 **DR. PATTERSON:** I thought that 20 percent buffer was only on the  
34 recreational sector. Is it on the commercial sector too?

35  
36 **MR. ATRAN:** The commercial sector has pretty consistently been  
37 about 1 to 4 percent under its quota every year.

38  
39 **CHAIRMAN BARBIERI:** Here's a question, Rich. Did the commercial  
40 sector ask for these underages to also be carried over?

41  
42 **MS. BOSARGE:** When we went out to scoping, when we had to do our  
43 IFQ review, that was one of the things that the commercial  
44 sector did respond to us in scoping. They said if there's any  
45 way that we could carry forward any uncaught harvest to the next  
46 year, because then it will get -- Essentially, if you carry it  
47 forward, it will get redistributed to the people that are out  
48 there fishing, as opposed to that handful that weren't, right,

1 and it will get caught the following year. With a small  
2 percentage, probably not, but that was one thing that they  
3 requested, but there is obviously a lot of -- The devil is in  
4 the details on trying to do that.

5  
6 **MR. MALINOWSKI:** The question I would have then to the SSC would  
7 be, okay -- Jim just mentioned that what would that minimal  
8 amount of carryover be, and that's one of the questions we're  
9 asking on the sheet here. Is 5 percent or greater okay to look  
10 at or is it worth it? That's what we're saying, but you say  
11 worth it to a recreational fisherman, and one fish is worth it,  
12 and so we really can't say that like that, but, if it's 5  
13 percent compensates for natural mortality and compensates for  
14 discard mortality, we can give you projections for 5, 10, 15,  
15 and so forth.

16  
17 **CHAIRMAN BARBIERI:** Yes, Jim.

18  
19 **DR. TOLAN:** I will take the lead of our Vice Chair and rescind  
20 my snarky comment that I'm sure someone cares, but I think  
21 that's where the simulation of some of these different  
22 combinations would really come in handy for us to help guide you  
23 with some better ideas of where to go with this proposal. I  
24 think some of these, on the face, seem sort of arbitrary, and so  
25 it's hard for us to say this is a good number. If we could have  
26 the simulations, that would be, I think, helpful.

27  
28 **CHAIRMAN BARBIERI:** Shannon.

29  
30 **DR. CALAY:** I seem to recall at a recent SSC meeting that Steven  
31 presented some guidance about these overages and what was  
32 allowable, a couple of SSC meetings ago, maybe. My recollection  
33 is, and maybe you have taken this into consideration, but I  
34 can't tell from just a quick read of these paragraphs. My  
35 recollection is that you still can't exceed OFL, and so there's  
36 some limit you can't exceed. Is that explicitly --

37  
38 **MR. ATRAN:** We can't exceed ABC, and ABC is less than OFL, and  
39 so this is why we would need to involve the SSC in anything that  
40 we do here. Since we set our ACLs right at the ABC level, if we  
41 have an underage, we cannot add it back on, or even a portion of  
42 it back on, to the following year, because that would put the  
43 following year over its existing ABC.

44  
45 Whatever we do, we have to come back to the SSC and ask you if  
46 we can do something that would still be consistent with the  
47 rebuilding plan. I know the revisions to the National Standard  
48 1 Guidelines are talking about carryovers, but they don't get

1 away from that. Under both the revised NS-1 Guidelines and the  
2 existing ones, we still have to come to the SSC and ask you if  
3 you would be willing to consider revising the ABC for the  
4 following year.

5

6 **CHAIRMAN BARBIERI:** Jeff and then Joe.

7

8 **DR. ISELY:** That gets us right back into doing projections with  
9 limited data is the only way we're going to do that, and so it  
10 seems like red snapper is always being assessed, continuously,  
11 because, as soon as one assessment finishes, the next one starts  
12 immediately, because it's such a hot topic, but I think we're  
13 trying to avoid that. Therein lies the problem. You can't add  
14 last year's overages on top of this year's ABC, because it puts  
15 you into the overfished, or beyond the target anyway, realm,  
16 and, unless you're willing to do projections or accept  
17 projections with limited data, then there's no way to do it.

18

19 **CHAIRMAN BARBIERI:** Thank you, Jeff. Joe.

20

21 **DR. J. POWERS:** I was just reading the document that I just sent  
22 out, but one of the things that really comes to mind very  
23 quickly, and it was demonstrated in these simulations, is that,  
24 in essence, by creating these sorts of overages and underages,  
25 you're putting a lot of stress on the precision of actually  
26 monitoring these things.

27

28 How much money you invest in getting that precision, in effect,  
29 becomes an allocation decision. You will set up fights between  
30 people about why are you spending more money to do that and  
31 this, and it just goes on like that, and so be aware of that  
32 sort of thing.

33

34 **CHAIRMAN BARBIERI:** I am not going to even attempt to emulate my  
35 esteemed Vice Chair here and try and summarize and capture what  
36 the discussion has converged into, but would anybody -- Does  
37 anybody have a feeling for the way forward here? How should we  
38 respond to this request? The IPT is getting that request from  
39 the council, because the council is being approached by  
40 stakeholders and being asked that question.

41

42 The IPT bumped into some technical issues and came to the SSC  
43 and said, okay, help us unscramble this situation here, and can  
44 you provide some guidance on the way forward? At the very  
45 least, I think we should send some kind of response that would  
46 allow the IPT to provide something back to the council, even if  
47 it might be just saying, no, this is not possible by X, Y, or Z,  
48 or have some justification of yes, it is, with these caveats or

1 whatever. Will.

2  
3 **DR. PATTERSON:** I think we have to be careful here, and we can  
4 offer -- I think we're within our purview to offer advice as to  
5 ways in which the council might explore giving the payback, if  
6 they decided to, for an underage, but this came up earlier, but  
7 I didn't raise the point, during the shrimp discussion.

8  
9 I think, in this case, and earlier, we're getting dangerously  
10 close to making management advice, instead of simply saying,  
11 okay, well, quantitatively, if you wanted to do that, here are  
12 probably some methods that could be explored, but, when we start  
13 going through and making comments about, well, it's 5 percent or  
14 10 percent and is that meaningful or not, I think we're on thin  
15 ice in that respect, and I would hope that we didn't make any  
16 recommendations as far as how the council chooses to manage the  
17 fishery. We can provide advice as to whether a given option  
18 might do one thing or another, but --

19  
20 **CHAIRMAN BARBIERI:** Rich.

21  
22 **MR. MALINOWSKI:** I think the thing we're looking for is not that  
23 kind of what Will just said, but, okay, Rich, at the least, you  
24 have to take into account natural mortality and you have to take  
25 into account the growth that's going to occur, the things that  
26 we need to consider. Then we can see if we can pull up some  
27 kind of model or do some projections based upon those parameters  
28 that you're saying we need to look at, but we're not asking you  
29 to give us ideas towards management, but just here's the things  
30 that we need to decide what kind of percent is the variable  
31 that's going to make a difference of if we can do this or not.

32  
33 If we've got a 10 percent mortality rate, if we've got less than  
34 10 percent underharvest, we're not going to be able to carry any  
35 of it over, and so those are the things we're looking towards,  
36 because, if we do take our numbers back to the council, they're  
37 going to say, where did you get these arbitrary numbers, and so  
38 we're looking just for some -- We can say, okay, here is the  
39 parameters we need to look at that the SSC recommended to us,  
40 and we're going to figure out how to do this in the model and we  
41 will come back to you, but us coming back with nothing is not  
42 acceptable.

43  
44 **CHAIRMAN BARBIERI:** To me, this question sounds simple, but it's  
45 really complicated, because this is part of what stock  
46 assessments do. It's to evaluate changes in biomass and  
47 population size and landings over time when you take into  
48 account the dynamics of the population.

1  
2 To do this without looking at all of those vital rates and all  
3 those factors is really very difficult, and I mean I can't think  
4 of a real objective way to do it and integrate all of those in a  
5 way that's meaningful. Let the record show that Shannon and  
6 Jeff Isely are having to leave. Thanks again.

7  
8 Rich, not to sound -- I hope the council members present are not  
9 too disappointed, but we want to make sure that there is  
10 credibility in the advice that we are providing and, in this  
11 case, it's just very difficult to do this, and also there is  
12 this issue that Jeff brought up, and I think Kai as well, that,  
13 depending on how much is left over, how much would that put us  
14 over next year? How do you integrate this into the advice  
15 that's already there and predicted by the rebuilding plan  
16 without doing another assessment?

17  
18 This is when, in my opinion, and this is the analogy that you're  
19 spending money and don't know how much you have in the bank. If  
20 you're underspending, you're probably having more money left  
21 over in the bank than you're spending. You don't know how much  
22 that is, and most of us just call the bank or check how much  
23 balance we have before we buy a Tesla. It can get painful. I  
24 have Sean and then Rich.

25  
26 **DR. S. POWERS:** So is our advice then that there is no simple  
27 way to do this and that you have to live with rerunning the  
28 projections, which we've done in the past, but have identified  
29 some weaknesses, at this meeting in particular, or do another  
30 update assessment? There is no simple answer is the consensus I  
31 see.

32  
33 **CHAIRMAN BARBIERI:** I agree, Sean. Will.

34  
35 **DR. PATTERSON:** Or we can take an approach like Joe did and  
36 actually have somebody run the simulations and figure out what  
37 is an area where you probably would never really get in trouble  
38 with causing overfishing the next year, or delaying recovery is  
39 probably a better way to say it. I think we can capture that in  
40 the comments in the report and just say all of these issues were  
41 raised, but, as a way forward, you would at least want to run  
42 some simulations to figure out what's a safe zone. Then, if  
43 there is so much uncertainty with that, then perhaps the only  
44 way to do it would be to do an update.

45  
46 **CHAIRMAN BARBIERI:** Rich, if you're happy with that, then I will  
47 try to flesh out a more coherent justification to help the IPT  
48 understand the SSC input, but I think this captures the spirit



1 of how we are feeling at this point.

2  
3 **MR. MALINOWSKI:** I want to defer to the chairperson of the  
4 council up here and ask her if this is sufficient to come back  
5 to the council in October or not.

6  
7 **MS. BOSARGE:** I don't think -- Off the cuff, and I'm not going  
8 to live or die by this, but there is a lot of push from the  
9 council to continue to explore this, and so I don't think -- You  
10 all obviously are definitely not going to sit here and endorse  
11 this today, but if you could give us the most -- I really think,  
12 me, as a councilperson, when I go back, if the council says we  
13 want to keep going with this and they're going to direct the IPT  
14 to keep evaluating it and give us some examples or do whatever,  
15 some analysis, and bring it back to us, then, if I was at that  
16 council table at that point, I would say, well, when you go  
17 forward with that, you need to try and be overly conservative in  
18 the way that you look at this carryover, in the sense that, when  
19 you run some sort of analysis, don't take into account any  
20 growth from those fish that got left in the water, but do  
21 discount those fish for natural mortality.

22  
23 In other words, err on the side of caution when you look at  
24 that. That was one thing that I think I heard around the table.  
25 If the council decides to keep moving forward with this, we need  
26 to err on the side of caution and don't take into account really  
27 the pluses, but definitely subtract out the minuses if you're  
28 going to run any projections and look at this.

29  
30 From the standpoint of the fishermen on the water, you can see  
31 where, in his mind, it seems simple. You told me that I could  
32 catch 100,000 pounds of fish this year, and I only caught  
33 90,000, and so I've got 10,000 left. Take off the part that's  
34 going to die naturally out there over that year and then let me  
35 go catch them, and that's kind of conservative in his mind,  
36 because it doesn't account for any reproduction by that 10,000  
37 pounds that stayed out there and grew and hopefully maybe  
38 reproduced, and so I think that the key message that I would  
39 take home is, if the council says keep pushing forward on this,  
40 so that the IPT doesn't spin their wheels, we need to be very,  
41 very conservative as we move forward with this, and then let the  
42 SSC -- Run it back to them again and say, okay, now shoot us  
43 down or tell us we're okay or whatever it may be.

44  
45 **MR. MALINOWSKI:** The question is natural mortality is one factor  
46 we can put into these projections. Should we be putting in  
47 closed season discard mortality into these projections or  
48 estimates too? If you could give me those things that we need

1 to look at, we can take it back to the lab and say, okay, let's  
2 see if we can run projections with all of these things in it.

3  
4 **CHAIRMAN BARBIERI:** Yes, and, Rich, fundamentally, it's a  
5 balance sheet, right? You have to try and balance all the  
6 inputs with all the outputs there and, to be conservative, you  
7 kind of stay away from most of the inputs and you try to see  
8 what are all the other things that are causing fish to die,  
9 because they are unlikely to be around next year by the time  
10 that folks go and try to take them. Kai.

11  
12 **DR. LORENZEN:** Right, but I think those are the two main things.  
13 It's natural mortality and it's the discard mortality, and that  
14 gives you something that is reasonably conservative.

15  
16 **MR. MALINOWSKI:** Okay. I can take that back to the IPT and say  
17 let's -- We can see what we can do from there. Ryan, do you  
18 have anything to say?

19  
20 **MR. RINDONE:** I'm good. Thanks.

21  
22 **CHAIRMAN BARBIERI:** Thank you for hanging in there, Ryan. I'm  
23 sorry that we couldn't hear you properly on this end and had to  
24 keep you waiting. Okay. Now, what else from this, Mr. Atran?

25  
26 **MR. ATRAN:** If you want, we could go over the previous  
27 alternatives that the SSC had come up with two years ago for ABC  
28 control rules. Are you interested in reviewing that? I see no.  
29 Otherwise, I think we're finished, unless there is some other  
30 business.

31  
32 **CHAIRMAN BARBIERI:** I think that for ten minutes after four on a  
33 very intense day, I don't think we want to -- We are about to  
34 lose some of our members who have flights already scheduled, and  
35 they're going to be leaving very soon, and so, unless there is  
36 any other business, I will suggest that we adjourn the September  
37 meeting. Thank you all for coming, all the presenters and staff  
38 and council members. It's always a pleasure to have you around  
39 and help us think through and address some of these issues, and  
40 so meeting adjourned.

41  
42 (Whereupon, the meeting adjourned on September 21, 2016.)

43  
44 - - -