

1 GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

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

5
6 Gulf Council Office Tampa, Florida

7
8 July 30-31, 2019

9
10 **STANDING SSC VOTING MEMBERS**

- 11 Joseph Powers.....
- 12 Lee Anderson.....
- 13 Luiz Barbieri.....
- 14 Harry Blanchet.....
- 15 David Chagaris.....
- 16 Benny Gallaway.....
- 17 Robert Gill.....
- 18 Douglas Gregory.....
- 19 Jeff Isley.....
- 20 Walter Keithly.....
- 21 Robert Leaf.....
- 22 Kai Lorenzen.....
- 23 Campo Matens.....
- 24 James Nance.....
- 25 William Patterson.....
- 26 Kenneth Roberts.....
- 27 Steven Scyphers.....
- 28 Jim Tolan.....

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30 **SPECIAL MACKEREL SSC VOTING MEMBERS**

- 31 Jason Adriance.....
- 32 Kari MacLauchlin Buck.....
- 33 John Mareska.....

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35 **SPECIAL REEF FISH SSC VOTING MEMBERS**

- 36 Jason Adriance.....
- 37 Judson Curtis.....
- 38 John Mareska.....

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40 **SOCIOECONOMIC SSC VOTING MEMBERS**

- 41 Kari MacLauchlin Buck.....
- 42 Jack Isaacs.....
- 43 Andrew Ropicki.....

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45 **STAFF**

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- 47 John Froeschke.....Deputy Director
- 48 Lisa Hollensead.....Fishery Biologist

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2 Jessica Matos.....Administrative Assistant
3 Natasha Mendez-Ferrer.....Fishery Biologist
4 Ryan Rindone.....Fishery Biologist & SEDAR Liaison
5 Charlotte Schiaffo.....Administrative & Human Resources Assistant
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7
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13 Roy Crabtree.....NMFS
14 Alisha DiLeone.....NMFS
15 Michael Drexler.....Ocean Conservancy, FL
16 Lauren Gentry.....FWC
17 Karen Greene.....NMFS
18 Peter Hood.....NMFS
19 Mike Larkin.....NMFS
20 Rich Malinowski.....NMFS
21 Rick Methot.....NMFS
22 Paul Mickle.....GMFMC, MS
23 Jeff Pulver.....NMFS
24 Matthew Smith.....NOAA

25 - - -
26

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TABLE OF MOTIONS

PAGE 72: Motion that the SSC recommends that for future assessments of reef fish stocks and red drum the MSY or MSY proxy equals the yield produced by FMSY or F proxy recommended by the council's SSC and subject to approval by the council through a plan amendment. The motion carried on page 77.

PAGE 84: Motion the SSC recommends that in Sub-Action 1.2, for Alternatives 2 through 8, an FMSY proxy of 30 percent and for Alternative 9 an FMSY proxy of 40 percent. The motion carried on page 85.

PAGE 99: Motion that the SSC recommends that in Sub-Action 1.3 the MSY proxy be Alternative 3, that the MSY proxy for red drum is the yield when fishing at F30 percent SPR. The motion was withdrawn on page 102.

PAGE 112: Motion that the SSC recommends that in Action 3 that Alternatives 4 and 5 not be the preferred alternatives. The motion carried on page 115.

PAGE 147: Motion that the SSC recommends that an ABC Rule Working Group be reconvened to evaluate the existing ABC control rule and propose improvements. The motion carried on page 153.

PAGE 234: Motion that the committee requests the SEFSC analyze the assessment outputs of yield stream projections that result in a spike in yield in the first year(s) of the projection to determine cause and evaluate potential solutions. The motion carried on page 235.

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1 The Standing & Special Reef Fish, Mackerel, and Socioeconomic
2 Scientific and Statistical Committees of the Gulf of Mexico
3 Fishery Management Council convened at the Gulf Council Office
4 on Tuesday morning, July 30, 2019, and was called to order by
5 Chairman Joe Powers.

6
7 **INTRODUCTIONS AND ADOPTION OF AGENDA**
8

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

14
15 Representing the council is Paul Mickle, to my right, and
16 council staff in attendance are Ryan Rindone, John Froeschke,
17 Carrie Simmons, Matt Freeman, Lisa Hollensead, Jessica Matos,
18 Natasha Mendez-Farrer, and Charlotte Schiaffo.

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

25
26 This is the following topics for review at this meeting: the
27 Adoption of the Agenda, Scope of Work, Approval of Minutes,
28 Selection of the SSC Representative for the Meeting in New
29 Orleans, and then a number of presentations relating to the best
30 scientific information available, National Standard 1 Guidance
31 on proxies, and several scientific presentations about the use
32 of proxies.

33
34 The major discussion this afternoon will be the Review of Status
35 Determination Criteria Amendment, Alternative ABC Control Rules,
36 and then go on to Review of MRIP and State Survey Progress,
37 SEDAR 62: Gray Triggerfish Progress, Council Research and
38 Monitoring Priorities, Gray Snapper Operational Assessment Scope
39 of Work, West Florida Shelf Hogfish Scope of Work, a
40 Presentation on Removal of Structures, Almaco Jack Life History,
41 and other business that comes before the council.

42
43 This webinar is open to the public and is being streamed live
44 and recorded. Summary minutes of the meeting will also be made
45 available to the public. For purposes of voice identification,
46 each member is requested to identify him or herself, starting on
47 my left.

1 DR. KAI LORENZEN: Kai Lorenzen, Standing SSC.
2
3 MR. RYAN RINDONE: Ryan Rindone, Gulf Council staff.
4
5 DR. JAMES NANCE: Jim Nance, Standing SSC.
6
7 MR. CAMPO MATENS: Camp Matens, Standing SSC.
8
9 DR. BENNY GALLAWAY: Benny Gallaway, Standing SSC.
10
11 DR. JEFF ISLEY: Jeff Isley, Standing SSC.
12
13 MR. DOUGLAS GREGORY: Doug Gregory, Standing SSC.
14
15 DR. ROBERT LEAF: Robert Leaf, Standing SSC.
16
17 MR. JOHN MARESKA: John Mareska, Reef Fish SSC.
18
19 DR. STEVEN SCYPHERS: Steven Scyphers, Standing SSC.
20
21 DR. DAVID CHAGARIS: David Chagaris, Standing SSC.
22
23 DR. JUDSON CURTIS: Jud Curtis, Reef Fish SSC.
24
25 DR. JACK ISAACS: Jack Isaacs, Socioeconomic SSC.
26
27 DR. WALTER KEITHLY: Walter Keithly, Standing SSC.
28
29 DR. KENNETH ROBERTS: Ken Roberts, Standing SSC.
30
31 DR. LEE ANDERSON: Lee Anderson, Standing SSC.
32
33 DR. WILLIAM PATTERSON: Will Patterson, SSC.
34
35 DR. LUIZ BARBIERI: Luiz Barbieri, Standing SSC.
36
37 MR. ROBERT GILL: Bob Gill, Standing SSC.
38
39 DR. JIM TOLAN: Jim Tolan, Standing SSC.
40
41 DR. ANDREW ROPICKI: Andrew Ropicki, Socioeconomic Panel.
42
43 DR. KARI MACLAUHLIN-BUCK: Kari Buck, Mackerel and
44 Socioeconomic.
45
46 DR. RICK METHOT: Rick Methot, NOAA Senior Scientist for Stock
47 Assessments.
48

1 **DR. SHANNON CALAY:** Shannon Calay, Southeast Fisheries Science
2 Center.
3
4 **DR. PAUL MICKLE:** Paul Mickle, Gulf Council.
5
6 **CHAIRMAN POWERS:** In the back, you might as well introduce
7 yourselves as well.
8
9 **MR. PETER HOOD:** Peter Hood, NOAA Fisheries.
10
11 **DR. JOHN FROESCHKE:** John Froeschke, Gulf Council staff.
12
13 **DR. MIKE LARKIN:** Mike Larkin, NOAA Fisheries.
14
15 **DR. ROY CRABTREE:** Roy Crabtree, NOAA Fisheries.
16
17 **DR. MATT FREEMAN:** Matt Freeman, council staff.
18
19 **DR. NATASHA MENDEZ-FERRER:** Natasha Mendez-Ferrer, council
20 staff.
21
22 **MS. LAUREN GENTRY:** Lauren Gentry, FWC.
23
24 **MR. STEVEN ATRAN:** Steven Atran, council staff, retired.
25
26 **MR. JEFF PULVER:** Jeff Pulver, NOAA Fisheries.
27
28 **MS. ALISHA DILEONE:** Alisha DiLeone, NOAA Fisheries.
29
30 **DR. LISA HOLLENSHAD:** Lisa Hollensead, council staff.
31
32 **MS. KAREN GREENE:** Karen Greene, NOAA Fisheries.
33
34 **MS. MARA LEVY:** Mara Levy, NOAA Office of General Counsel.
35
36 **CHAIRMAN POWERS:** All right. Thank you. A couple of business
37 items. There is a sign-in sheet that's being passed around, and
38 it started in that direction, and so make sure that you fill it
39 out, particularly if you're a member of one of the SSCs. Also,
40 today and tomorrow's session will have a working lunch, and
41 we're bringing in lunch, and it's paid for by the panel members,
42 who will not have an opportunity to leave the meeting to procure
43 food for themselves elsewhere. When lunch is served, please
44 allow the panel members ample opportunity to obtain their meal.
45 After that, others can help themselves, and there is a café in
46 the high-rise next door, and so that's sort of standard.
47
48 All right. You have the agenda in front of you, and the first

1 thing is to adopt the agenda. I would mention that, under Other
2 Business, Luiz had brought up a couple of documents, and,
3 basically, I haven't had an opportunity to review them, but I
4 want to at least allow people to realize that those documents
5 exist, and they're on the website for Agenda Item XVI, and we
6 will discuss them as time allows, and not with the idea of
7 actually coming to any endpoint, but rather just the information
8 there and the context of it. That will be included in other
9 business. With that, do I hear a motion to adopt the agenda?

10
11 **DR. BARBIERI:** So moved.

12
13 **CHAIRMAN POWERS:** Do we have a second?

14
15 **MR. GILL:** Second.

16
17 **SCOPE OF WORK**

18
19 **CHAIRMAN POWERS:** Any objection to adopting the agenda? All
20 right. Thank you. The agenda is adopted. The Scope of Work,
21 this document sort of outlines our game plan for each one of the
22 agenda items very briefly, and I would advise people to kind of
23 keep this handy as we go through the discussions. Ryan, did you
24 want to say anything more about that?

25
26 **MR. RINDONE:** Thank you, Mr. Chair. No, but just, if anyone has
27 any questions, just let us know. We have tried to detail
28 everything in here, to give you keys a ten-thousand-foot view of
29 each of the agenda items.

30
31 **APPROVAL OF SSC MINUTES**

32
33 **CHAIRMAN POWERS:** Thank you. Then Approval of the Minutes.
34 Again, on the website, we have the minutes for the last meeting
35 that was conducted by webinar, just for a few hours, in May.
36 Have you had the opportunity to review this? If there is no
37 comments, then I would like a motion to accept the minutes.

38
39 **MR. GILL:** Move approval.

40
41 **SELECTION OF SSC REPRESENTATIVE AT AUGUST 12-15, 2019 COUNCIL**
42 **MEETING IN NEW ORLEANS, LOUISIANA**

43
44 **CHAIRMAN POWERS:** Is there a second? We have a second. Are
45 there any objections? If not, then we will proceed with that.
46 The next thing is the Selection of SSC Representative for the
47 Council Meeting in a couple of weeks in New Orleans. Luiz has
48 volunteered, and, if there is nobody else that wants to do it,

1 or I want to give people the opportunity to kind of get into
2 this sort of activity, if you're interested. If there are no
3 objections, then we'll go ahead with Luiz, but I would encourage
4 people to come to me and talk to me if you are interested in
5 this kind of thing, to give other people the opportunity. Thank
6 you.

7
8 Then we're on to Agenda Item V, and we have a series of
9 presentations, beginning with Dr. Rick Methot, first on the best
10 scientific information available policy of NMFS and what that
11 implies for us, and then we're going on into National Standard 1
12 Guidance. We will begin with Rick with the BSIA presentation.

13 14 **PRESENTATIONS**

15 **BEST SCIENTIFIC INFORMATION AVAILABLE - NOAA POLICY DIRECTIVE** 16 **FOR STOCK STATUS DETERMINATIONS AND CATCH SPECIFICATIONS**

17
18 **DR. METHOT:** Thank you, Joe. I'm glad to have an opportunity to
19 come here in person to give this presentation and to get your
20 feedback on what we've been able to accomplish, and it's been a
21 very collective accomplishment, with engagements with all the
22 councils over an extended period of time, and so let me walk my
23 way through a short presentation, and then I would be glad to
24 take any questions you have.

25
26 The guidance that we have here builds upon the National Standard
27 2 Guidelines that have been in place for several years, and the
28 National Standard 2 Guidelines give us a lot of information
29 about best scientific information available, but it actually
30 doesn't lay out the steps for how we collectively, NMFS and the
31 councils, go through the process of coming to a conclusion that
32 our management actions are indeed based upon the best scientific
33 information available. There was a need to fill this gap and
34 provide some more specific guidelines on determination of BSIA.

35
36 In this document, we have laid out very clearly now the role of
37 the SSC, the very significant role of the SSC, in arriving at
38 this process, and the SSC is responsible for providing the
39 science advice to your council, and you need to do that on the
40 basis of your understanding that what you're doing is based upon
41 the best scientific information available, but, for the larger
42 scheme, it is a step towards the final process, and so the final
43 regulations, as implemented by the National Marine Fisheries
44 Service are indeed based upon the best scientific information
45 available, and so it's a step going through the SSC and then a
46 final step as the regulations get their final approval.

47
48 We have laid this out, and the process of going back and forth

1 between the councils and the regions and the Science Centers and
2 coming to a common understanding of how this plays out in a
3 number of different circumstances affected by the timing of the
4 process. The number of species involved, the nature of the
5 information available, the nuances that really make it difficult
6 to have a one-size-fits-all process, was extreme. It took us
7 several years to work our way through just a good common
8 understanding that can provide guidance without being overly
9 restrictive, but can still give us guidance on moving forward.

10
11 I would say that the multi-year dialogue that we collectively
12 had in getting to this stage was part of the accomplishment
13 itself. My sense is that all the councils and all the NMFS
14 Regions and Centers have moved closer to a common understanding
15 of this process through the discussion that we had and is now
16 documented here.

17
18 Again, we have been at this -- This slide shows the final few
19 years of the discussion back and forth with the CCC and various
20 councils, and the initiation of this conversation is actually
21 several years before that, and this timeline that you see here
22 lays out some of the significant steps that we went through in
23 order to get to this common understanding of what are the steps
24 we go through in order to arrive at BSIA.

25
26 This procedural directive is one that provides us the steps that
27 we expect to go through, and, in almost all cases, it is
28 basically documenting what people have been doing, and it's just
29 clarifying the language around it. We do provide some
30 augmentations to the guidance and what kinds of things we think
31 will provide a better, more consistent approach to a BSIA
32 determination, but, overall, the steps are that we certainly
33 start with a stock assessment process, starting off with good
34 terms of reference for that stock assessment.

35
36 Be certain that you are going into the assessment with a common
37 understanding of here's the questions we want to tackle, and
38 here's the things we've either put to bed in previous
39 assessments or we just aren't ready to tackle this year, but
40 really focusing the terms of reference on a clear understanding
41 of here's what we want to accomplish, here's the science we want
42 to bring forward, and here's the reviewers we need in order to
43 be certain that it's good work. Starting with that is a big
44 step in the process.

45
46 The second step is the peer review process itself, and the
47 National Standard 2 compliant peer review processes have all
48 been documented around the country, and your SEDAR process is

1 certainly among those and one that provides a very complete
2 review of it.

3
4 Coming out of the review process, there is usually a step of
5 some degree of assessment revision, in order to clean up the
6 responses to things that have come up during the review.
7 Following that, it then is handed over to the SSCs and NOAA
8 Fisheries for subsequent work and determinations.

9
10 Finally, it goes to the councils for developing catch
11 specifications, and the final step is NOAA Fisheries approval,
12 and, in that approval process, recognizing that it is compliant
13 with the National Standards, and that includes National Standard
14 2, which means that the final regulations are indeed based upon
15 the best scientific information available.

16
17 Again, going back through this same process, but now
18 highlighting one of the significant changes that we have
19 introduced with this, and one of the stumbling blocks we've seen
20 happen many times, in many regions of the country, is that an
21 assessment will attempt to accomplish some aspect of advancement
22 in the scientific work and not be able to complete it. It
23 encounters some encumbrance to getting it done, and we've had
24 too many instances in which we've come to a conundrum of needing
25 to reject the entire assessment because some aspect of it ended
26 up being perceived as flawed or incomplete or not ready for
27 primetime.

28
29 We realize that that's not a necessary conclusion and that it's
30 better for us to go into this review process with an expectation
31 that there is four main components of what we want the
32 assessment to do and which we want the review to focus on, the
33 first being does the assessment provide adequate information on
34 the stock status relative to overfishing?

35
36 Another is stock status relative to overfished criteria, a third
37 aspect is being able to provide advice on what sustainable catch
38 would be for the upcoming fishing year, and the fourth would be
39 larger-scale considerations of potential changes in the control
40 rules, the reference points, things that the new science has
41 come forward in the assessment, and they will have advice on
42 changes like that, and, if so, that is a separate step.

43
44 We see that an assessment may well accomplish, or even attempt,
45 only one of these four, or it may attempt all four of these, but
46 to treat them separately and to recognize that coming to a
47 conclusion on each of them independently is a wise move, because
48 it allows us to accept the good and, for things that are not yet

1 ready for use, those can be put aside, and you can get back to
2 them in a subsequent round.

3
4 The communication around the determination part, the status
5 determination process, and the SSC's process of coming up with
6 catch recommendations has been one of the challenges in coming
7 up with guidance, because the timing with which NOAA Fisheries
8 is operating to look at the assessment and come to a
9 determination of the status of the stock, whether or not
10 overfishing is occurring, whether or not the stock is
11 overfished, that is happening essentially in parallel with the
12 SSCs, looking at the same questions, but focusing on what should
13 the sustainable catch be.

14
15 It is best if we can come to a conclusion on the status of the
16 stock, whether or not a stock is still overfished or not, or if
17 it's first-time overfished or whether it's now rebuilt, and
18 getting that decision made first and then getting on with what
19 should the catch be, given this status determination.

20
21 The timing of that is extremely vexing, as you look around the
22 country at all the different situations, where, in some cases,
23 there could be many months between the time an assessment first
24 shows up and when it finally gets presented to the council, or
25 finishes moving through a review process.

26
27 In other cases, it's all happening in a week's time for fifteen
28 or twenty assessments, and so this difference in timing has
29 certainly made it challenging to come to a process, and so we
30 talk about this in the document, and we try to lay out some
31 guidance, but the overall guidance is that, given the framework
32 that we lay out here, we're putting it back into the hands of
33 each regional group, each Regional Office, Science Center, and
34 council, to work together and now take this framework and write
35 down, for your particular circumstances that you deal with, what
36 are the steps that you go through in order to arrive at this
37 BSIA determination, because it's going to differ, to some
38 degree, in each region, because of the timing, because of the
39 nature of the information you have, and that's okay, but we have
40 this general framework, and we are laying it in your hands to
41 the next step of documenting, regionally, how you're going to
42 implement this.

43
44 As we go through this communication process to arrive at a
45 common understanding of the assessment, one of the things that
46 we believe will be helpful is something that already occurs to
47 varying degrees in each of our regions, but we believe that some
48 of the gaps in communication that have occurred in the past

1 could have been alleviated if it was clear that the SSC should
2 be prepared to reach out to NMFS if you have a question.

3
4 Then, if we at NMFS can have someone who is close at hand for
5 the SSC, certainly no more than a phone call away, certainly
6 someone who is prepared to help provide a perspective from NMFS
7 on some question that the SSC has, if we can get that
8 communication happening early, we'll all be better off, because
9 we'll now be able to resolve questions and then move on with
10 other business, and so establishing this point of contact
11 between NOAA Fisheries and the SSC is one of the things that we
12 think is important for you to find a way to do.

13
14 The actual step of getting to the determination that BSIA is now
15 -- We're well on the pathway, and we will be able to come to a
16 final conclusion that the management action is based upon BSIA,
17 and one of the steps that can help that is when we end up
18 concluding the science is done.

19
20 Concluding the science step before moving on with the management
21 step is something that you find in the National Standard 2
22 Guidelines from several years ago, the idea that you don't want
23 to muddle the idea of making a determination and deciding
24 whether or not the determination is based upon good science.
25 Determine the science and understand what kinds of questions the
26 science can provide answers for and come to that conclusion.

27
28 Do the peer review of the science, and then move on to making
29 management recommendations on the basis of the science. That is
30 the separation that is there in National Standard 2, and we
31 reiterate it here, that this degree of separation is important
32 to have a good flow.

33
34 To the degree possible -- Some of our Science Centers already
35 are writing a memo to the record that says that the science is
36 now done, and we're putting the assessment into our database,
37 and we call it the Species Information System, and it's a place
38 where the records can be locked, and this is now the science
39 that we have, and that is then used by the Regional Offices as
40 they make status determinations. At that stage, we're able to
41 provide more complete documentation, to be really clear that the
42 science is now done at this step, and we're ready to move on
43 with the management actions.

44
45 We understand that the SSCs are in need of looking at a range of
46 alternatives as you develop your catch recommendations, your
47 ABCs, and providing advice to the councils on buffers going into
48 ACLs, and that's your role in this process, and the information

1 you may need to look at subsequent to completion of the
2 assessment, and we recognize that that happens, but we're,
3 again, reiterating what's in the National Standard 2 Guidelines
4 already.

5
6 We don't want duplicative reviews. If there is need for
7 additional clarification after the original SEDAR review is
8 completed, that's fine, but to move on and to recognize that the
9 doing science too quickly is just a recipe for getting off-track
10 and getting mistakes made, and it's better, if there is
11 lingering questions, that we put them into the research
12 questions to take up the next round, and so focusing on just
13 looking at the assessment and its details, in order to provide
14 the catch recommendations, understanding the nuances of how the
15 fisheries operate and how proposed regulations might interact
16 with what the actual ABC recommendation could be. Additional
17 model runs to accomplish that certainly are routine and
18 necessary, and understanding how the assessment is working is an
19 important part of getting to that stage.

20
21 That is a normal part of the process, but additional reviews are
22 not going to help us get more assessments done for more species,
23 and keeping them all up-to-date and focusing on the good, really
24 good, peer review process you have through SEDAR is the way to
25 accomplish that.

26
27 The next step in this, as I mentioned earlier, the expectation
28 is that the council will work with the Regional Office and the
29 Science Center to take stock of this overall framework, which
30 you have all been party to, to helping to build, and now state
31 an implementation plan, from your perspective. How does this
32 work in the Gulf, given the timing with which you could
33 accomplish assessments and the kinds of information that you
34 have?

35
36 We have laid out a timeline of three years to accomplish this,
37 and I don't think it's going to be a heavy lift. I mean, I
38 don't think it's going to be a whole lot more than affirming
39 what's here, and that's certainly a way to go, but it's an
40 opportunity to provide more specificity to exactly how you would
41 go through this process.

42
43 I will just conclude with thanks for the opportunity, and we are
44 certainly prepared to engage in further discussions on this,
45 and, again, thank you for your active engagement in getting to
46 this stage.

47
48 **CHAIRMAN POWERS:** Thank you, Rick. One of the things that was

1 presented here, which I think is really important, because we
2 kind of got ourselves into a trap, is these four items of what
3 it is we're trying to make recommendations about, the four items
4 being is it overfished, is it overfishing, are the projections
5 okay, and general status determination criteria themselves, MSY
6 and those sorts of things.

7
8 We, probably more than some of the other SSCs, have been caught
9 in a trap of kind of rejecting or accepting whole assessments
10 without dealing with individual ones of these questions, and so
11 I think that's an important thing going forward, but, other than
12 that, I sort of interpret that as kind of codification of things
13 -- This particular policy is asking for codification of things
14 that are already being done, in a lot of cases, and the
15 opportunity to tweak it to achieve those sorts of goals. Are
16 there any other comments, or are there any comments or questions
17 that we want to make about this? Doug.

18
19 **MR. GREGORY:** The only part that's confusing to me is the role
20 of the SSC when there is a peer review process. In the past, it
21 seems like the SSC gets caught up mostly on the projections, and
22 so what the policy says is for the SSC to understand the
23 assessment and its uncertainties, but not to repeat the
24 assessment in any way. Does that leave open the possibility of
25 the SSC questioning the projections or rejecting them and asking
26 different types of projections to be done, or is that door
27 closed on the SSC when there is a formal peer review process
28 prior to it getting to the SSC?

29
30 **DR. METHOT:** Thank you, and it certainly was one of the kinds of
31 questions that was challenging to work our way through, because
32 there certainly are other situations where the SSCs do the
33 entirety of the review themselves and then very quickly get into
34 making recommendations, which has its own challenges to it.

35
36 We do expect that the SSC will have additional questions as you
37 work on implementing, and we also expect, and it happens, that
38 the SSCs are engaged in the peer review process, and it's quite
39 common around the country, and it's not just here, for the SSCs
40 to have someone who is on the peer review, even chairing the
41 peer review panels, and so the expectation is that the SSC
42 already has some engagement in the peer review process, and it
43 oftentimes has a role in laying out the terms of reference for
44 the peer review process, and that certainly happens, and so we
45 don't see a disconnect between the peer review process. We see
46 the peer review process as the deep-dive on the review.

47
48 If things go off the rails there, then the SSC is a backup for

1 that, but, if things don't go off the rails in the peer review,
2 and certainly there could be questions, because there is
3 uncertainties, that may come out of the peer review, that, hey,
4 we can't decide if it's 50/50 this or that, then we get into the
5 challenging situation of what does the SSC do, and what does
6 NMFS do, if we end up with an assessment that says, hey, we have
7 a lot of uncertainty coming out of it, and we think there is
8 good science behind this scenario and that scenario, but we
9 can't decide, but, at some point, a decision needs to be made,
10 or we need to find a way to come to agreement on how to blend
11 the uncertainty into advice.

12
13 The challenge all along is for NMFS and the SSCs and the
14 councils to arrive at the same conclusion when we have that kind
15 of uncertainty, and so we expect the SSC, after the peer review
16 -- If the peer review has gone smoothly, and there's a fairly
17 clearly well described answer, we don't expect the SSC to do
18 much more than accept that this has been a good deep-dive peer
19 review and move on with making recommendations after seeing
20 enough of it to understand it and move on and not ask new
21 questions.

22
23 There is always questions, right, and there is always going to
24 be new questions that can be asked, but to focus on using the
25 peer review to do that deep-dive and not repeat it, but it does
26 mean that, in coming up with your advice, you don't need some
27 details attended to, and to ask for the additional model runs at
28 that stage is normal business everywhere in the country, but
29 that's not another review, and that's what we're trying to
30 separate.

31
32 We don't want to prolong it, because we're trying to shorten the
33 time lag between data and advice, and we can't do that if we
34 have multiple views, and it's never going to be perfect, and so
35 being able to move on with other species and making it better in
36 the next round, and the whole effort going on to try to look at
37 research assessments versus operational assessments is all part
38 of this bigger picture as well. To take the deeper dive in the
39 research assessments and then be able to quickly implement the
40 operational assessments is part of this overall approach to
41 trying to improve our throughput of good enough assessments,
42 while trying to make them all better as well.

43
44 **CHAIRMAN POWERS:** Any other questions or comments? If not,
45 thank you, Rick. Before we move on to the next presentation by
46 Rick, I forgot that there are people on the webinar that I
47 didn't give the opportunity to introduce, and I think Jason
48 Adriance is on the webinar. Charlotte, is there anybody else?

1
2 **MS. CHARLOTTE SCHIAFFO:** Nobody else from the SSC. It's just
3 Jason.

4
5 **MR. JASON ADRIANCE:** Jason Adriance, Reef Fish SSC.
6

7 **CHAIRMAN POWERS:** Thank you. Sorry for that interruption. Then
8 we're moving on, and we're getting into National Standard 1
9 Guidance on Estimation of Fishing Mortality and Biomass Proxies.
10 This is all leading essentially to this afternoon's -- Well, I
11 don't know if this afternoon or this morning, but the discussion
12 about how the Gulf Council might change our status determination
13 criteria for a number of species, and particularly because we're
14 sort of operating off of an old standard, and so these series of
15 presentations are meant to kind of provide us a background as we
16 get into the discussions this afternoon, and so we're beginning
17 with Rick and National Standard 1 technical guidance.
18

19 **NATIONAL STANDARD 1 GUIDANCE ON ESTIMATION OF FISHING MORTALITY**
20 **AND BIOMASS PROXIES**
21

22 **DR. METHOT:** Thank you, Joe. Again, this is Rick Methot, NOAA
23 Senior Scientist for Stock Assessments. I am now going to talk
24 about our progress on developing updated technical guidance on
25 National Standard 1.
26

27 The last time we did technical guidance on National Standard 1
28 was 1998, and I was there. Joe, you were on that too, I think,
29 and a few of us are still around, and there's been a lot of
30 research on these topics of what are good reference points and
31 how do you go about calculating them, and how do you deal with
32 them in data-limited situations, and there's been a lot of work
33 on this over the last several decades, and it's due for an
34 update on the technical guidance for National Standard 1.
35

36 We aren't complete on this. A couple of pieces of it are well
37 along, but let me walk you through where we're at and how we
38 expect to move forward. We're going to develop multiple work
39 products.
40

41 We have divided this work into three sub-groups, and the first
42 sub-group is on reference points themselves, and I am chairing
43 that sub-group. The second sub-group is focusing on ABCs, and
44 one of the provisions for carrying over, or phasing in, ABC
45 changes from one year to the next, and the third sub-group is on
46 approaches for more flexibility in the approach that we use for
47 data-limited stocks.
48

1 Let me take them in sort of reverse order here. The Sub-Group 3
2 is on data-limited stocks, and it's chaired by Jim Berkson, who
3 has been working on this topic for a number of years, and we
4 have a couple of staff liaisons from the various councils.

5
6 We have John here from this council, and we have Marlow from the
7 Western Pacific, and this Sub-Group 3 is focused on a number of
8 topics with regard to how do we deal with data-limited stocks
9 and how do we go about setting and managing annual catch limits
10 when the technical approaches that we normally expect to use for
11 National Standard 1 are not quite effective.

12
13 We are looking to recommend alternative approaches for defining
14 and managing ACLs that still can comply with MSA and prevent
15 overfishing, and we're also looking to identify some alternative
16 approaches that can be used to generate valid estimates for some
17 of these data-poor stocks.

18
19 We recognize that the expectations of having ACLs for all stocks
20 and having status determinations for all stocks is difficult to
21 achieve. There is a very large fraction of the stocks around
22 the country, including this region, that have data-limited
23 situations, and being able to provide management advice in those
24 circumstances is something that we have in our wheelhouse.

25
26 Sub-Group 2 is focusing on carryover and phase-in, and it's
27 chaired by Dan Holland from Fisheries, and we have Ryan Rindone
28 from this council that is a liaison to that, as well as Josh
29 DeMello.

30
31 It is looking to produce a tech memo, and this is now in draft
32 form with Fisheries, to provide advice and recommendations for
33 designing and evaluating the carryover provisions and the phase-
34 in, and I know that this council in particular was very
35 interested in having provisions of this sort, and, in laying out
36 how this can play out in different situations, the factors that
37 really matter are how frequently are you actually updating
38 assessments, that is to say how stale is the information, and
39 that affects your ability to logically phase-in new advice when
40 it comes onboard and also how uncertain is each bit of advice as
41 it comes onboard.

42
43 If things are highly uncertain from one assessment to the next,
44 phasing-in may or may not make the best sense, and so the tech
45 memo that they've been working on, and, again, it's well along,
46 and it's in the review process now, is something that we think
47 will provide some guidance on how to go about implementing the
48 provisions.

1
2 Essentially, it's always been possible to craft an FMP control
3 rule that would have some phase-in or carryover provisions, but
4 it was laid out more explicitly in the most recent round of the
5 National Standard 1 Guidelines, and so now providing technical
6 guidance for doing that is something that we have taken on. The
7 plan right now is to be able to present this to the CCC at its
8 November call.

9
10 Sub-Group 1 is working on reference points. Again, I am
11 chairing this group, and we have a number of liaisons. We have
12 Diana Stram from the North Pacific and Mark Fitchett from the
13 Western Pacific and John DeVore from the Pacific and Mike
14 Sissenwine from the Northeast, and so we have a number of
15 connections to various councils in our discussions on this
16 topic.

17
18 It's a very multifaceted topic that we're trying to tackle. The
19 main things that we have narrowed it down to are listed here at
20 the top, with these six. It's to summarize current approaches
21 in the FMPs and to think through what does it mean to make an
22 overfished determination when we don't really have a biomass
23 time series to work from and how can we flesh out the
24 expectations on total catch accounting when you take into
25 account all the various nuances of what catch might be.

26
27 We are looking to provide advice on situations where a review
28 not only says that the current attempted assessment doesn't pass
29 muster, but potentially past assessments on this stock also may
30 have been flawed in some way, and under what circumstances do we
31 then move from a known back to an unknown status for that stock,
32 and that's something that we're working on.

33
34 We recognize that the Magnuson Act actually expects that we are
35 providing advice not only on when a stock is overfished, but
36 also on stocks that are approaching an overfished condition, and
37 it's not something that we have explicitly called out very
38 frequently, and it's a topic that we think would be helpful to
39 help us recognize that we may be heading in the wrong direction,
40 or we may be close, but we haven't crossed the line yet, and
41 there is still time to take corrective action, and so to be able
42 to flag these more clearly is something we want advice on.

43
44 Finally, the whole process of how do we go about estimating FMSY
45 and BMSY and the various proxies -- The two talks that are going
46 to follow mine certainly are talking about this topic very
47 directly, and it's very good work, and I'm very glad to see the
48 good work happening in this region on this topic and the things

1 that you're going to have here later today.
2
3 One of the things that we're looking to do, again, is to
4 summarize the FMSY and BMSY approaches that are out there. Most
5 stocks in the country have an FMSY based upon some proxy.
6 Typically, that proxy is expressed in terms of spawner potential
7 ratio, which is the fish spawning biomass per recruit divided by
8 the unfished spawning biomass per recruit, and the selected SPR
9 proxies range pretty broadly, from F20 percent to F50 percent
10 being the range that we see in the various FMPs and stocks
11 around the country.
12
13 This graphic lays out some of that diversity. A large number
14 are using F30 percent, but there is also a number at F45 and
15 F50, and there are some that are estimated directly, and most of
16 these are from data-moderate stocks that have biomass dynamics
17 models being applied, and I will get into this differentiation.
18
19 We have a diversity of approaches that have been taken around
20 the country in order to articulate what is the proxy to be used
21 when you cannot directly estimate the FMSY from your science
22 about the stock dynamics.
23
24 Similarly, on BMSY, and, again, there is a range of approaches,
25 from as low as 20 to 26 percent, up to 40 or 50 percent as the
26 expected BMSY levels, and so, again, this range raises some
27 questions about are we as consistent in invoking a basis for our
28 determinations as we could be and can we take advantage of the
29 work that's gone on over the last thirty years on this type of a
30 topic to come to a better consensus on what is a good approach
31 when we can't confidently calculate it directly.
32
33 With regard to the topic of status determinations from having an
34 SPR measure, and this comes up today in the data-limited world,
35 where we have essentially equilibrium-based assessments. We
36 have a snapshot of the size structure of the stock today, or
37 maybe the age structure, and we have something that gives us a
38 sense of whether or not the stock today is experiencing too much
39 fishing or not.
40
41 The question that arises is, well, if we're taking essentially
42 an equilibrium-based approach to coming to that determination,
43 and we come to a determination that it looks like overfishing is
44 occurring, essentially we're coming to the same determination
45 that overfishing has been going on for sufficiently long for it
46 to show up in this picture of the stock today.
47
48 The question then is can we also use that as a way to make an

1 overfished determination or not, and, in the past, we have shied
2 away from making such overfished determinations on the basis of
3 assessments like that, but there's been a lot of work and a lot
4 of thinking about how we can deal with data-limited stocks, and
5 so we're looking to revisit this question of whether or not it's
6 a good approach.

7
8 Again, in situations, and they are very common situations, where
9 we don't have enough information, and we have a good, dynamic
10 picture of the stock over time, but we do have some snapshot of
11 where it may be at today and can we take this a bit further, is
12 what we're trying to do.

13
14 Catch accounting is fairly straightforward, but there is a bunch
15 of nuances, things like research catch and things like catch in
16 other fisheries and how do you deal with bycatch when you're
17 dealing with the status determinations on Species X, when there
18 is bycatch in another FMP, or Species Y, and certainly you deal
19 with that in this region.

20
21 We are trying to lay out the various topics that come up in this
22 catch accounting world, so that we can come up with good
23 practices for how to deal with this, and this is, again, a white
24 paper that we are nearly complete with having a full draft, and
25 it's something that we'll be able to start floating out I think
26 fairly soon.

27
28 The known to unknown status change in the next slide, what we're
29 looking to do here is to provide guidance on when should we make
30 a switch from saying that a stock that we previously thought was
31 known -- Should we now consider it to be unknown, based upon
32 newly-determined shortcomings in the science that we have, and
33 have the standards changed over time in such a way that what we
34 previously thought was an adequate basis for making a status
35 determination is now no longer considered to be an adequate
36 basis for a status determination.

37
38 We don't want to get into that situation very often, but it's
39 certainly recognized that it can happen, and so we have, again,
40 some draft guidance on this, and we're expecting it to be
41 finalized within a year, and we want to be able to get away from
42 so much of a case-by-case determination on this and have some
43 actual guidance on circumstances in which moving it back to an
44 unknown status is the better thing to do and other circumstances
45 where it's best to just dial it back to more data-limited
46 perspective on the science that we have and see what kinds of
47 status determinations we can make from a more data-limited
48 perspective, rather than the more expansive assessment that

1 previously had been attempted.
2
3 That is really, I think, the main point there, is can we find
4 ways to move back to basically a lower-tiered approach to
5 answering the question of is there overfishing or not.
6
7 Let me spend a little bit more time now on the topic of
8 reference points, and one of the big issues that has really
9 captivated our working group, and we have been meeting by
10 conference call every couple of months, and we end up stumbling
11 on this kind of a question all too often, and the dichotomy is
12 this. It's that, when we take basically a data-moderate
13 approach to an assessment by using a biomass dynamics sort of
14 model, it's all so easy.
15
16 In the end, you have an MSY and an FMSY that just fall in your
17 lap at the end of doing this assessment, and it's hard to tell.
18 You get very few diagnostics out of such an approach, but you
19 get an answer, whereas, in the age-structured world, we can ask
20 all kinds of questions, and we do, and we get wrapped around the
21 axle all too easily with a number of detailed questions of
22 things that we can easily demonstrate matter. There are 10 or
23 20 percent changes in what the advice would be as we look at
24 various factors.
25
26 What we're trying to do is find a way to use this richness of
27 the science that we can get into in the age-structured world,
28 yet still come up with advice that is as easy to articulate as
29 the biomass dynamics kind of advice, and we're looking to have
30 it both ways, if we can, and we're working on that.
31
32 I mean, I can't say that we have a clear path yet as to how we
33 get there, but we recognize that as sort of a fundamental
34 challenge to what we're doing, and the talks that we're going to
35 hear after mine will certainly illustrate very well, I think,
36 the kind of thinking that's going into the science today.
37
38 I am not certain why I included this slide, but this is just
39 demonstrating the degree to which things matter. This is just a
40 slide that shows that, as you think about the spawner-recruit
41 relationship that's included within the age-structured
42 approaches, the parameter that controls the productivity of the
43 stock, what we call the steepness of the spawner-recruit
44 relationship, it matters a lot. It's a two-parameter curve, and
45 so changing one parameter changes the shape of the curve and
46 changes where various things happen along that curve.
47
48 The figure on the right-hand side simply shows that this

1 steepness level ranging from a minimum of 0.2 up to 1.0 matters
2 quite a bit on where BMSY will end up being calculated to be
3 relative to B zero. If you expand your approach, expand your
4 thinking, to a more flexible curve that has three parameters,
5 then this whole thing fuzzes out, and you don't have this fixed
6 relationship anymore.

7
8 The first fundamental choice that has uncertainty to it is,
9 well, what is the structural form for this spawner-recruit
10 relationship, and then the second question is can we estimate
11 the steepness of the relationship, or we do we need to estimate
12 it, and what would an adequate proxy be for it?

13
14 The issue of what is the structural form is the first question,
15 and the second question is can we parameterize that structural
16 form, and both contribute to the uncertainty in the assessments,
17 again, as you will hear.

18
19 Sort of to wrap it up here, as we think about this situation
20 with the age-structured assessments, we have uncertainty on what
21 is the productivity function, and Beverton-Holt and Ricker are
22 two possibilities, but there are other possibilities, and
23 parameter estimation, and there is many, many papers that show
24 how challenging it is to come up with good parameter estimates,
25 even if you have a long time series. It really depends upon the
26 nature of that time series.

27
28 Accounting for the complexity of fleets and bycatch with
29 different selectivities, and, as we get into multi-area models,
30 and certainly acknowledging the spatial complexity of
31 populations is something that we're moving in that direction
32 with our science and being able to also come up with good
33 reference points that work in a spatial world is another
34 challenge that we have.

35
36 Another concept that's out there in the literature of the
37 concept of pretty good yield, that, essentially, the yield curve
38 is sort of flat-topped, and you can fish harder on less fish and
39 get about the same amount of yield as fishing lighter on more
40 fish, and it's a bit flat in between, and there are advocates in
41 the literature of more explicitly acknowledging the degree to
42 which this flat-topped relationship exists.

43
44 I have already mentioned the spatial issues, and the other big
45 challenge that gets into the productivity estimation is in
46 regime shifts, or even more challenging is, essentially, the
47 potential for long-term drift in the productivity of stocks as
48 ecosystems change over decades or centuries.

1
2 As they change, and don't do it abruptly, will we be able to
3 have sufficiently flexible approaches to status determinations
4 that can work on providing guidance, even in these changing
5 circumstances?
6

7 Another topic that we see as within the realm of these
8 investigations is the idea that the act itself is stated largely
9 in terms of maximizing yield in terms of catch biomass, and it's
10 not completely explicit in that regard, but it's there, and
11 certainly the concepts were like that.
12

13 It was built around the concepts of maximizing yield for
14 essentially commercial fisheries, but, as we consider fisheries
15 that are not so much focused on maximizing yield and biomass,
16 and maybe there is recreational fisheries that are maximizing
17 opportunities to fish, or it's the potential that you want to
18 optimize, and are there ways for us to recognize this more
19 explicitly and to build it into the approaches for determining,
20 well, what is the right way to fish, in order to achieve these
21 kind of objectives, when the objectives are more nuanced than
22 simply maximizing the catch biomass.
23

24 Another topic that I think is fairly technical, but I think it's
25 ripe for easy work is the units of reproductive potential, and
26 it's happening all over the country. As we have evolved from
27 measuring reproductive output -- The act itself is measured in
28 terms of protecting the reproductive potential of populations,
29 and, for many years, we defaulted to essentially using mature
30 biomass as the measure of reproductive potential, but there's
31 been a lot of work on investigating the reproductive
32 contribution of older, larger -- The non-linearity in
33 reproductive output puts a premium on the reproductive output
34 from older, larger female fish.
35

36 Gradually, we have seen more measures of this showing up in the
37 assessments and then just being used in the status
38 determinations. The challenge is that the work on determining
39 what are good proxies for FMSY, that work was largely done in
40 the 1990s, and it was all done sort of conditioned on mature
41 biomass being the measure of reproductive potential, and, when
42 you do the math, you end up needing to recalibrate those proxies
43 a bit as you transition to measuring reproductive output in
44 terms of ovary weight or in terms of fecundity measurements,
45 because the older animals make a proportionally greater
46 contribution, and so they are proportionally more impacted by
47 fishing, and that ends up requiring some degree of
48 recalibration.

1
2 It's certainly something that could be done, and identifying and
3 summarizing the work that's already been doing this is one of
4 the things that we're working on.

5
6 The final point is, and, again, it's one that you're going to
7 hear in one of the upcoming talks, is the degree to which we can
8 recognize the uncertainty in these approaches in a way that can
9 move us into an approach that is more like an integration across
10 the uncertainty that looks at the potential impacts and looks
11 less at coming up with point estimates.

12
13 Again, we don't want to do this without providing a full
14 solution, because to provide a partial solution isn't going to
15 help, and just recognizing that there is uncertainty doesn't
16 help if you don't provide a way to continue to provide advice
17 conditioned on that uncertainty, and so that full package is
18 more what we would want to do, and, again, I'm looking forward
19 to hearing the talk later this morning and your discussion on
20 that topic.

21
22 In summary, we've got several topics underway. We're not going
23 to package these all up into one document. We will roll them
24 out as we can, given the amount of resources we have available
25 to move into this, and I appreciate the contribution from
26 several of the council members and council staff who are
27 participating to provide their perspective, and it does help us
28 out a good bit, and the degree to which we can really settle on
29 something that we could label as technical guidance versus
30 reviewing the current state of science.

31
32 Most of them, we're still at the reviewing the current state of
33 science stage and not yet at pulling it together into technical
34 guidance on something that is stated in terms of here is good
35 practices for really how we should be doing this, and that's
36 what technical guidance looks like, and we may not be able to
37 get to that stage on most of these topics, but we certainly are
38 looking forward to reviewing the current state of science.
39 Thanks for the opportunity, and I look forward to any questions
40 you have.

41
42 **CHAIRMAN POWERS:** Thank you. Are there any comments or
43 questions before we go into the other presentations? Ken.

44
45 **DR. ROBERTS:** Thank you, Mr. Chairman. This is out of my area,
46 but I'm going to ask it anyway. Looking at your second-to-last
47 slide, the considering the state of science, one of the things
48 that has puzzled me is that I think most assessments are getting

1 kind of mature. We have more and more years in the time series,
2 and that, to me, as an economist, is telling me that the fishing
3 effort, the effectiveness of fishing effort, over a longer time
4 period can't be treated uniformly as a constant, and I'm
5 wondering if anybody is working on trying to identify what role
6 the changing of fishing effort impacts over time has on the
7 assessment.

8
9 **DR. METHOT:** Thanks for the question. That certainly is a topic
10 that comes up in the assessment process itself, and it's sort of
11 a step removed from the status determination aspect, but it
12 certainly does affect the potential quality of an assessment
13 that then feeds into status determinations, and so the issue of
14 how fishing regulations, how the state of the fishing stock, how
15 just coastal communities themselves evolve over time, how that
16 changes and what does the fishing effort mean is a topic that
17 there is work on.

18
19 It's a challenging topic, and the existence of that exact
20 question is one of the reasons we have put so much importance on
21 having good fishery-independent surveys, to provide us a measure
22 of how the stock is doing, and we certainly want to understand
23 what is happening with fishing effort as well, but, if we can
24 rely more completely on fishery-independent surveys to measure
25 the stock and not rely on an interpretation of fishing
26 statistics in order to provide us information about the stock,
27 we believe that we are in a better position to provide objective
28 advice on the stock assessment.

29
30 **DR. ROBERTS:** Thank you.

31
32 **CHAIRMAN POWERS:** Thank you. Any other comments? I was going
33 to mention a couple of things, because why not? I have the
34 microphone. Pretty good yield. One thing that has always
35 bothered me about pretty good yield is, if you view it from a
36 management perspective, a lot of times, even though it may say
37 that in terms of the objective, that you want to maximize
38 sustainable yield, a lot of it has to do with allocation and
39 with participation and with fishing effort.

40
41 A pretty good yield, where you may, over a wide range of
42 biomass, you may get a 5 percent change in yield, but it might
43 mean something like 10 or 20 percent change in F , and that
44 relates to things like participation, allocation, and it relates
45 to employment sorts of things, and so, in my mind, you have to
46 think of it in both areas, because, from a management
47 perspective, those sorts of things are going to become
48 important, and so that's kind of the tradeoff that you have to

1 think about. The second thing is -- Did you want to comment on
2 that?

3
4 **DR. METHOT:** Yes, and I would just say, and thank you, Joe, that
5 we always are essentially in a bit of a pretty good yield,
6 because we are optimizing a perfect control situation, and we
7 accept fisheries as they are, fleet allocations and selectivity
8 of fleets, and it always is sub-optimal, in terms of what it
9 would take to engineer a fishery to exactly get the maximum
10 yield from a stock, and so we already have moved somewhat in
11 that direction by just accepting the technical characteristics
12 of the current fishery.

13
14 **CHAIRMAN POWERS:** Yes, and it also means taking a longer look at
15 what you mean by optimum yield too, but the other item I was
16 going to mention, and this is refining the units of reproductive
17 potential, and this goes back to many years ago, and we have
18 spawning potential ratio, and it's pretty straightforward.

19
20 We are measuring them in terms of egg production, and we were
21 told that you couldn't do that, because the FMP said spawning
22 biomass per recruit ratio, and or it said SPR, but you measured
23 it in terms of spawning biomass, and so that has always stuck
24 with me, that you try to avoid codifying scientific sorts of
25 criteria, because that was something that was pretty obvious to
26 us, that this was just a better way of measuring what you
27 wanted, and so you want to build that flexibility in there,
28 because there's been a lot of cases where you do want to measure
29 reproductive potential in terms of eggs.

30
31 In the case of red snapper here in the Gulf of Mexico, Phil
32 Goodyear showed that that relationship between biomass and egg
33 production wasn't linear as the fish got older, and so those are
34 important things to be able to incorporate as the science
35 evolves, and, again, my bias is to try avoid codifying these
36 sorts of things as you get in the management process. Thank
37 you. Luiz.

38
39 **DR. BARBIERI:** I actually thought about one point, Rick. If you
40 go to Slide 8 or 9, thinking about us discussing reference
41 points, and here you're talking about, in Slide 8, FMSY, and I'm
42 thinking about the range there that we see on that graph and
43 trying to think about us defining MFMT now as risk neutral
44 versus some of these choices here, and so how much do you think
45 there is embedded here so accounting of risk by precaution in
46 the choices of these values? Like how much have they been
47 decided here based on something like this?

48

1 I am thinking more about more recently, where you actually look
2 at OFL and those reference points that are produced, especially
3 the exploitation one that comes out of the assessment as risk
4 neutral, and then we move on to catch advice that integrates
5 scientific uncertainty and then risk. Can you comment a little
6 bit on that, please?

7
8 **DR. METHOT:** That's a great question. Most of these have been
9 in place in FMP amendments for a long time, and we've gone back
10 and tried to look at the original amendments and the original
11 discussions, trying to decipher essentially that question of
12 what were they invoking as their basis, because they all have
13 sort of the same set of references, and the Clark 1991 kind of
14 references are there, and the degree to which you could be
15 perfectly objective about here's what we know about the stocks
16 in our region, and, therefore, we're using F35 percent and not
17 F39 percent, you're not going to find it.

18
19 It's different groups at different times and taking their best
20 sense of what was the state of knowledge at that time, and so
21 how many subtleties are behind it is really impossible to
22 discover, and so I don't think any would say that they are
23 explicitly risk-averse, and I think that they would acknowledge
24 that this whole process is designed to keep the risk of stocks
25 becoming overfished at a tolerable level, and, hence, to
26 maximize yield conditioned upon that, but these quantities here
27 are then trying to identify what is that tipping point beyond
28 which it would be overfishing, and I don't think any would say
29 that they are explicitly risk-averse.

30
31 I think they all are going for FMSY, which is the peak, which
32 it's another challenging semantic aspect of what we have arrived
33 at, collectively, over many decades of this, and it would be
34 hard to unravel today, and that is that our limit level of
35 fishing, FMSY, produces our target level of biomass, BMSY, and
36 that's a knife-edge situation to try to be at, and it's the kind
37 of thing that only with perfect knowledge and perfect control
38 could you ever actually do that, and so I think we're always
39 sort of struggling against that fundamental squeeze we have
40 between the fact that we have our limits and our targets
41 intertwined so tightly.

42
43 **CHAIRMAN POWERS:** Thank you. Doug, did you have a comment?

44
45 **MR. GREGORY:** Luiz's questions make me look at this and think
46 about it, and I don't really know what's going on, but I would
47 hazard a guess that the 45 and 50 percent mostly are from the
48 Pacific Council, where they have rockfish that live to be over

1 100 years old, and the 40 percent is mostly New England and the
2 Mid-Atlantic, and maybe that's them trying to rebuild the
3 groundfish fishery. I don't know, and I'm just speculating, but
4 it's a great question to see what was the motive behind each of
5 these from the different councils, and it would be interesting.

6
7 **DR. METHOT:** Long-lived stocks are not necessarily low SPR
8 supporting stocks. I mean, as long as their recruitment is
9 pretty resilient -- I mean, their F rates, their fishing rates,
10 the F that it translates into, will be low, because of their low
11 natural mortality rates, but how resilient they are to declines
12 in recruitment is a bit of a separate question, and it doesn't
13 shake out that clearly, as you compare stocks around the world
14 on which ones tend to look like they have high steepness versus
15 low steepness. That is sort of what we were looking for, and it
16 just doesn't jump out at you that a meta-analysis, and there
17 have been meta-analyses using the RAM legacy database to try to
18 do that, and it just doesn't jump out at you that clearly.

19
20 **CHAIRMAN POWERS:** Thank you. Are there any other comments? If
21 not, thank you, Rick, for your participation. Are you going to
22 be here for --

23
24 **DR. METHOT:** Yes, I'll be around.

25
26 **CHAIRMAN POWERS:** Okay. Good. Now we're getting on to some
27 more specifics about some of these issues, and the next
28 presentation is Coping with Information Gaps in Stock
29 Productivity and Rebuilding for Grouper-Snapper Fisheries and
30 Dr. Harford.

31
32 **COPING WITH INFORMATION GAPS IN STOCK PRODUCTIVITY FOR**
33 **REBUILDING AND ACHIEVING MAXIMUM SUSTAINABLE YIELD FOR GROUPE-**
34 **SNAPPER FISHERIES**

35
36 **DR. WILLIAM HARFORD:** I am Bill Harford from the University of
37 Miami, and I wanted to start by saying thank you for this
38 opportunity to discuss this work. This work really focuses on
39 the idea of how we might think about proceeding in defining
40 reference points, particularly for OFL determination under the
41 circumstance that steepness is uncertain.

42
43 We start with this slide that shows the shape of a spawner-
44 recruit relationship on the left under two different values of
45 steepness, understanding that the steepness parameter has an
46 important effect on the shape of that relationship, and Rick
47 talked a little bit about this in his presentation, but what I
48 also wanted to introduce is, on the right, the plot on the

1 right, I have reproduced the same stock, in terms of steepness,
2 but now plotted SPR on the X-axis, and that's spawning potential
3 ratio, and the equilibrium catch on the Y.

4
5 What you can see is that steepness has an important effect on
6 where the peak occurs, where MSY occurs, with respect to SPR,
7 and so, when we think about this problem of defining proxy
8 reference points, what is confounded is this issue of steepness,
9 also having uncertainty in steepness, and, within NS 1, there is
10 allowance for the use of proxy reference points, and, often, the
11 fishing mortality rate that produces an SPR of X percent of
12 unfished SPR is sometimes used as that proxy, and that's an FSPR
13 proxy.

14
15 There is, obviously, important implications in several aspects
16 of status determination and the use of this proxy, the maximum
17 fishing mortality threshold, defining overfishing, the
18 estimation of MSY itself as a function of the FSPR proxy, and
19 also the minimum stock size threshold, defining the overfished
20 status. As I mentioned, steepness has a major influence on the
21 alignment of your proxy with the achievement of FMSY.

22
23 This work is coming out of a paper that's now been peer reviewed
24 and published, and the paper focuses on two issues. One is on
25 harvest control rules, and the other part of the paper is on
26 defining proxies for achieving maximum sustainable yield, and
27 so, given the topic of discussion the SSC is addressing today,
28 this presentation just addresses the latter issue, which is
29 achieving maximum sustainable yield.

30
31 I think it's important to point out that, as we talk about FSPR
32 proxies through this presentation, those proxies are aimed at
33 finding alignment with FMSY, and so this is why this discussion
34 is relevant to the OFL calculation.

35
36 In a nutshell, the methodology behind the paper, and the
37 question here is can we identify FSPR proxies that can be a
38 proxy for FMSY in the face of steepness uncertainty, and the
39 thinking behind this starts by saying can we formalize the
40 knowledge we have about steepness in the form of a prior
41 probability distribution, and this work has been done
42 previously, and it's been published prior to the work that I'm
43 presenting today, and so we have a prior. We have an
44 informative prior, and I will come back to this later in the
45 talk.

46
47 If we use that information to evaluate the performance of
48 different proxies across these states of nature, across these

1 steepness values, the expectation is that we can provide some
2 decision support for proxy selection based on a probabilistic
3 approach, and that's the method, in a nutshell, and I will come
4 back to methods momentarily.

5
6 This, of course, was a simulation study. Our focus was on two
7 reef fish assemblages, both gonochoristic stocks, mainly
8 snappers and other demersal species, the dolphin in the South
9 Atlantic, and a second assemblage was the protogynous
10 hermaphroditic stocks, mainly the groupers.

11
12 In simulating outcomes of this approach, we essentially
13 evaluated performance over a variety of FSPR proxies and asked
14 how well does their performance inform to FMSY if it were known,
15 and it's known because we simulated the data, and so we can make
16 the comparisons, and this is all done assuming knife-edge
17 selectivity at length at 50 percent maturity. I will come back
18 to that issue as well later in the talk.

19
20 These are the stocks that we considered in the analysis, the
21 gonochoristic stocks, mutton snapper, red snapper, vermilion,
22 yellowtail, gray triggerfish, three species of tilefish, and
23 greater amberjack. We saw something similar to these plots in
24 Rick's presentation, and I talked about this earlier, that the
25 value of steepness assumed for the stock affects the
26 corresponding SPR that produces MSY in the long term, and that's
27 all these plots are showing.

28
29 Similar for the hermaphroditic stocks, red, gag, black, and
30 snowy grouper, and red hind, and each of the stocks we included
31 in the analysis had been subject to quantitative assessment
32 through SEDAR, and we used the base case life history parameters
33 in all of these analyses, and, essentially, these were the
34 stocks that we felt had the most sufficient and reliable
35 information to be included in this analysis, as I mentioned,
36 based on their being subject to SEDAR assessment.

37
38 This is another slide about the methodology, and so, now that we
39 understand that this is a simulation project, we simulate each
40 stock and assume steepness for the stock, and we simulate the
41 performance of that stock against a given SPR proxy.

42
43 We can then summarize the performance outcomes with respect to
44 the steepness value assumed for the stock, but there is
45 something lacking about that, because, as you understand, the
46 performance is going to be conditional on steepness, but it is
47 uncertainty in steepness that brought us to this point of asking
48 how do we come up with proxies, and so, instead of having

1 outcomes that are contingent on steepness, we use a steepness
2 prior and produce marginal outcomes without reference to any
3 particular state of nature, and so that means that the results
4 are no longer conditional on any particular steepness value, but
5 they reflect instead our degree of belief in steepness, and that
6 degree of belief is defined according to the prior probability
7 distribution, and this prior in the bottom right of your screen
8 came from work by Shertzer and Conn in 2012, and it was a meta-
9 analysis used to identify steepness prior for demersal fish
10 stocks.

11
12 **DR. PATTERSON:** Could you go back to the last one, please? I am
13 confused in your Table 2 there. What are the rows? What are
14 those measures?

15
16 **DR. HARFORD:** These are just numbers that I made up to
17 illustrate that -- Each row would be a performance category, and
18 I'm going to show you that in the next slide. It would be a bin
19 of -- For example, you could think of it as biomass as a
20 fraction of BMSY, and let's look at the first column. It may
21 say that, 10 percent of the time, it was very low, and 30
22 percent of the time it was in some other bin, and these are
23 outcomes, stochastic simulation run outcomes, and the
24 distribution of those outcomes.

25
26 The point of the table is to highlight the problem that the
27 distribution of forecasted outcomes is a function of steepness,
28 and how do we deal with that problem, and the values in the
29 table have no particular meaning. They are just intended to
30 illustrate a point, and I'm going to show you the results on the
31 next slide, and does that make sense?

32
33 **DR. PATTERSON:** Yes. Thanks.

34
35 **DR. HARFORD:** Here are the results for the gonochoristic stocks,
36 and there's a lot here, and I'm going to spend a few minutes on
37 this slide, and so the idea behind this analysis is we want to
38 highlight the idea of formalizing knowledge about steepness, and
39 certainly you can do that. If you look at the first row of this
40 plot, you can certainly do that as a point estimate.

41
42 You are implicitly saying that you are certain about steepness,
43 and, in this case, we assumed that steepness was at 0.8, and so
44 what does that mean? Well, if you have a look at the -- In the
45 first row, if you look at the plot, where we have biomass as a
46 fraction of BMSY, and we interpret these plots in the way we
47 want to identify the FSPR proxy with the greatest probability
48 mass centered at BMSY, and what does that mean?

1
2 Have a look at the labels on the B over BMSY plot and find the
3 bin that's labeled "0.8 to 1.2". This is the bin that
4 encompasses BMSY, and, each line on the plot, you can think of
5 it as a probability distribution, or you could think of it a big
6 like a histogram. If you identify the orange line on the plot,
7 you will see that it's approximately centered over that bin of
8 0.8 to 1.2, and that orange line corresponds to the proxy of F30
9 percent SPR.

10
11 In other words, what this is telling us is that we have some
12 certainty of steepness, and it happens to be 0.8, but the F30
13 percent proxy would have the greatest probability mass centered
14 over long-term achievement of BMSY, and, similarly, the plot to
15 the right is catch as a fraction of catch at MSY.

16
17 What you will notice, and this came up in the last discussion,
18 and this is probably a good point to reiterate, is this idea
19 that the surplus production curve has a relatively flat top to
20 it, and so you see that many of the proxies perform similarly
21 when it comes to achieving MSY, but there is an important effect
22 on biomass associated with MSY.

23
24 Now, if we look at the next row in the plot, this uses an
25 informative prior from Shertzer and Conn that I mentioned, and
26 then, once we acknowledge that we have some uncertainty, and
27 that is there is some possibility that steepness is lower than
28 0.8, this changes our viewpoint of how to select a proxy.

29
30 The little arrow on the B over BMSY plot in the center row goes
31 through the same exercise that I just described, and,
32 essentially, it points to F40 percent SPR as having the greatest
33 probability mass centered around long-term achievement of MSY.
34 Again, these are proxies aimed at OFL determination, which are
35 based on achieving MSY in the long term.

36
37 Finally, the bottom row just highlights that this exercise can
38 also be carried out if you're not willing to acknowledge any
39 certainty in steepness, and I don't think that's the case here,
40 but we just wanted to point out that the exercise can be carried
41 out in that way as well. Those were results for the
42 gonochoristic species.

43
44 These are the results for the hermaphroditic stocks. It's the
45 same interpretation, and the take-away here is that, under the
46 informative prior, that F50 percent SPR has the greatest
47 probability mass centered around long-term achievement of MSY.

48

1 This brings us to the principal conclusion of this paper, and
2 that is that, given an informative prior and steepness, F40
3 percent SPR is most consistent with MSY reference points for the
4 gonochoristic stocks, the snapper stocks, snapper and some other
5 species, and, on the other side, F50 percent SPR is most
6 consistent with the MSY-based reference points for
7 hermaphroditic stocks.

8
9 I am going to go into some of the more nuanced conclusions of
10 the study in a moment, but I just want to say that what we found
11 in this study is consistent with the literature. The well-known
12 study from Clark in 2002 identifies F percent as being close to
13 optimum F when selectivity coincides with age at maturity, which
14 is the same conclusion that we found.

15
16 Mace from 1994 similarly suggested F40 percent SPR be adopted as
17 a fishing target when stock-recruitment relationships are
18 unknown. Brooks at al. from 2010 identifies that the SPR
19 reference point of 30 percent would only be appropriate for very
20 resilient stocks, and it reinforced the importance of selecting
21 an SPR level based on life history characteristics. We have
22 done that here as well.

23
24 There are some cautions in the literature that F40 percent may
25 be too low under a variety of situations, including prevailing
26 environmental conditions and some other uncertainties with
27 respect to life history, including natural mortality, and we
28 echo that same caution here, and, again, this is why I wanted to
29 reiterate that this paper is particularly aimed at status
30 determination criteria as it pertains to OFL calculation.

31
32 Another conclusion from this paper, and, really, this is just
33 mainly an interesting discussion point, is there is a notion
34 that hermaphroditic stocks should be able to sustain higher
35 fishing mortality because of their life history.

36
37 I wanted to explore this idea that, given our recommendation of
38 F50 percent SPR, does that conflict with this notion that some
39 of us, including myself, have heard before, and the answer is
40 no, and here is why. To understand this, we need to go through
41 a little bit of a thought experiment, and so what I have done
42 here is I have plotted the yield curve on the left for gag
43 grouper, and you could identify the absolute value of FMSY on
44 that plot. It's somewhere around 0.2.

45
46 Similarly, we can plot the surplus production curve on the
47 right, and I put SPR on the X-axis and relative catch on the Y,
48 and you can certainly identify the SPR that is associated with

1 long-term achievement of MSY. Gag grouper is a protogynous
2 hermaphrodite. If we do a thought exercise that says what if
3 there were a species that was identical to gag grouper in every
4 conceivable way, except that its sex ratio was 50/50 throughout
5 its life span, instead of transitioning from female to male,
6 and, because this was a simulation exercise, I can flip that
7 switch and say, okay, and again, this is just a hypothetical.

8
9 Now, if we look at the plot on the left, we do in fact see that,
10 if we change the sex ratio to 50/50, and, again, let me caution
11 that I am not suggesting the only difference in life history
12 between gonochoristic and hermaphroditic stocks is the
13 transition from female to male, but I am just saying, as a
14 thought exercise, we can explore this issue, because there is
15 point to be taken away from this.

16
17 If we look at the plot on the left, it does show that, under a
18 sex ratio of 50/50, we get a lower absolute value at MSY, and so
19 how does that align with the advice that we gave about F50
20 percent? I mean, it is because of the effect of transition from
21 female to male that we have to rethink our process for how we
22 identify the proxy reference points.

23
24 The plot on the right shows the change in the shape of the
25 surplus production curve, and so, for the hermaphroditic gag
26 grouper, we see that it's around 50 percent, or 0.5, and, for
27 the thought exercise, a 50/50 sex ratio of gag grouper, we see
28 that it changes the shape of that surplus production curve, and
29 so, really, what I am saying is that the idea of fish harder or
30 not needs to be somewhat reframed to ask what is the process for
31 identifying an SPR reference point for hermaphroditic stocks
32 that aligns with the achievement of FMSY, and our recommendation
33 is that process -- Our recommendation of that process is to
34 identify FSPR 50 percent, because of the effect of the
35 transition from female to male on the shape of that production
36 curve.

37
38 The other assumption that we made in this paper is that
39 selectivity is coincident with length of 50 percent maturity,
40 and what if that's not the case? What if selectivity is the
41 dashed line and maturity is the solid line? What if selectivity
42 occurred at sizes above L50? Well, in our SPR recommendations,
43 this circumstance would lead to less risk, in terms of
44 management. However, it would produce less than optimal
45 catches.

46
47 What if the opposite was true? What if we were harvesting fish
48 prior to their maturation? Well, I think the advice here is one

1 of priorities and seeking adjustments to regulations regarding
2 minimum size, notwithstanding, of course, that there can be
3 market-driven considerations, but harvesting undersized fish is,
4 of course, problematic. Immature fish is problematic, I should
5 say, and so, if that's a priority, then you could better align
6 minimum harvest size with length at maturity.

7
8 Finally, what if you find that you have a complex selectivity
9 relationship, and maybe it's dome-shaped? Well, our advice here
10 is that the exercise that we went through in this paper could
11 certainly be repeated in some data-rich context with a
12 particular stock of interest, or a particular stock of priority,
13 and we could redo this analysis really for any circumstance, any
14 particular circumstance, that is faced, including complex
15 selectivity relationships, and it would likely change the
16 results, of course, for that particular stock.

17
18 Finally, this is the last slide, and the question about whether
19 it was a reasonable assumption to assume that selectivity occurs
20 at length at 50 percent maturity, here's a table of a length at
21 50 percent maturity for a variety of stocks, and beside it is
22 the federal commercial regulatory size limit, and you can see,
23 in most cases, they are reasonably well aligned, perhaps with
24 the exception of black grouper on the right-side of the table,
25 but, otherwise, we think this was a reasonable assumption to
26 make in our analysis. Again, thank you for this opportunity,
27 Mr. Chairman, and I'm happy to take questions.

28
29 **CHAIRMAN POWERS:** Thank you. Any questions? Let me start, to
30 begin with, and I have a question. For the hermaphroditic
31 simulations, the argument is that the mass of the probability is
32 around F50 percent SPR. When you did the simulations, what was
33 the -- How did you handle the switch from females to males? Was
34 it just because they got to be a certain age, or was it related
35 to the number of males that were available and that sort of
36 thing?

37
38 **DR. HARFORD:** They are all vectors of proportion female at-age.
39 It's an age-structured model, and those are all taken from the
40 SEDAR assessments.

41
42 **CHAIRMAN POWERS:** Yes, but, in terms of productivity, it makes a
43 difference. I mean, you can do the assessment without knowing
44 exactly what that relationship is, but I am wondering how that
45 might affect productivity. Why do they change sex, basically,
46 and that's kind of been a debate that's been going on for years,
47 and so that's something to think about, I think. Are there
48 other questions that we should bring up here? Doug.

1
2 **MR. GREGORY:** Thank you, Bill. That was very good, and can this
3 simulation be done on a species-by-species basis, because I
4 noticed within the groupers, per se, there was a large
5 variation, and we have black grouper that matures a lot larger
6 than the size limit, and we have red grouper that matures much
7 smaller than the size limit, or the selectivity, and they are
8 combined in this, and we've got a red grouper assessment coming
9 to us in September, and so, if you can do it on a species basis,
10 that would be interesting for red grouper.

11
12 Also, for red grouper, it's a minor point, but you need to go
13 back and double-check your size at maturity, L50. Back in SEDAR
14 42, the working paper reported a fork length L50 of 331
15 millimeters, but, when it got into the SEDAR final report, it
16 was changed to 301 millimeters, and so that was a mistake there,
17 but that might have some minor influence, if you can do a
18 species-by-species analysis.

19
20 **DR. HARFORD:** Thank you for that. I will go back and check that
21 detail, but, to answer the other part of your question, yes, you
22 absolutely can repeat this exercise on a species-by-species
23 basis.

24
25 I can tell you that my thought process, when I started this
26 project, was thinking more about data-limited stocks and having
27 some broad advice regarding reference points for those stocks,
28 but, thinking about stocks where we have much more detailed
29 information, Doug, you're right. We can go back, and we can do
30 this on an individual stock basis, for sure.

31
32 **MR. GREGORY:** Thank you very much. The thing that's amazing to
33 me is how influential the priors are, the way you set it up. If
34 you have different sets of priors, you get slightly different
35 answers, but I am not familiar with Bayesian statistics, and so
36 I will leave it at that.

37
38 **CHAIRMAN POWERS:** The way I interpreted it is, in some sense, if
39 you specify the steepness, you are specifying everything else,
40 in terms of the status determination and MSY, and so, if you
41 have a prior on that steepness, then that gets translated
42 through the whole process. Correct me if I'm wrong.

43
44 **DR. HARFORD:** That's exactly correct, yes.

45
46 **DR. METHOT:** I would just add, and if you add uncertainty in the
47 structural form of the -- This is all based upon Beverton-Holt.
48 Once you fuzz that out a bit by bringing in a third parameter,

1 even that uncertainty gets broader.

2
3 **DR. HARFORD:** Yes, I agree, and that's something we haven't
4 looked at yet, is other forms of stock-recruitment relationship.

5
6 **CHAIRMAN POWERS:** Thank you. John, you had a comment?

7
8 **MR. MARESKA:** Yes, and so I'm looking at Slides 10 and 11, and,
9 if I read your paper correctly, these results are based on four-
10 times the lifespan of the group of the species, and you're only
11 looking at the last twenty-five years, when they're in a stable
12 state, and is that correct?

13
14 **DR. HARFORD:** That's correct, yes.

15
16 **MR. MARESKA:** My question is, is there any -- Because, when
17 we're looking at some of these groupings, there doesn't seem to
18 be significant differences between F30 to F50 percent, but is
19 there any informative information prior to this last twenty-five
20 years that would be helpful in say rebuilding a stock, and do
21 they reach these steady states at a faster rate? I assume they
22 do, but I was just wondering if that information is out there.

23
24 **DR. HARFORD:** Regarding the last twenty-five years, the idea
25 here is to have the stock in a more or less equilibrium state,
26 give or take recruitment variability. That's essential for
27 defining the proxy reference points, but, to the latter part of
28 your question about rebuilding, that was the other half of this
29 paper, in terms of harvest control rules.

30
31 Without getting into it in too much detail, I will say that,
32 certainly the more conservative you are with SPR reference
33 points, the faster rebuilding happens. There is, of course, a
34 tradeoff there between rebuilding the biomass and maintaining
35 catches for the fishery, and there are some subtleties to that
36 that we explore in the paper as well.

37
38 **MR. MARESKA:** More specifically, when there is a timeline for a
39 rebuilding plan, would there be information to say, to rebuild
40 the stock within a ten-year time period, would be it more
41 informative to go with say F40 or F50 percent?

42
43 **DR. HARFORD:** Well, I think that gets into the other part of
44 stock rebuilding under NS 1, which is, if we're in a data-rich
45 situation, and you must rebuild in ten years, if that's how it
46 occurs, you have to identify the fishing mortality rate that
47 will get you there in ten years, and so that differs a little
48 bit from defining the OFL-based reference points that we have

1 focused on here.

2
3 There is a related question in a data-limited context about
4 reducing a fishing mortality rate when you can't do a stock
5 assessment, and that's something we explore a little bit, and
6 I'm not sure that our explorations align with what is
7 permissible now under NS 1, and that's a bit debatable, but,
8 really, I think that, for this discussion, and for this paper,
9 the choices related to F SPR reference points are really
10 informative with respect to OFL determination when you're in a
11 non-rebuilding phase.

12
13 There are too many moving parts, let's say, to simplify the
14 guidance during rebuilding to selection of one of these proxies,
15 and we do go through that in the paper, and so my suggestion is
16 that the guidance that I can provide this morning should be
17 really focused on OFL determination, but I appreciate your
18 concern about rebuilding, and that is a big part of the paper as
19 well.

20
21 **CHAIRMAN POWERS:** Thank you. Doug.

22
23 **MR. GREGORY:** Bill, I have one other question. In reference to
24 Slide 8, do you have any insight as to why the red grouper and
25 gag grouper kind of line themselves up almost like a separate
26 assemblage? Now, you don't have, in this presentation, the SPR
27 on the Y-axis, but, when you look at the SPR graph, which is in
28 the paper, the hinds kind of close in on the other groupers, and
29 so they look like an assemblage, but still the red grouper and
30 the gag grouper are off by themselves in a different almost like
31 area, and have you run this without the South Atlantic red
32 grouper and the Gulf of Mexico gag, to see if you get a
33 different answer with the others?

34
35 **DR. HARFORD:** The difference in the position of the lines on the
36 graph reflect the interaction between the maturity as a function
37 of age, and the proportion female is a function of age. Now,
38 these are the parameters that were used in the SEDAR assessment,
39 and so that's what separates some of these lines on the plots.
40 Sorry, Doug, but I missed the second part of your question.

41
42 **MR. GREGORY:** The second part was, if you rerun this without the
43 South Atlantic red grouper and without the Gulf of Mexico gag
44 grouper, do you get a similar answer, with the majority part of
45 the probability curve being over 0.5 steepness, or does it fall
46 down to closer to 0.4?

47
48 **DR. HARFORD:** You still end up with a probability mass centered

1 close to 0.5, but I can tell you, as a rule of thumb, if you
2 remove the species that are at the top of that plot, you start
3 shifting towards F40 percent, and, conversely, if you remove the
4 species that are at the bottom of that plot, you start shifting
5 towards 50 and 60 percent, and so that's how you can interpret
6 that, but, overall, you still stay in the neighborhood of 50
7 percent with the groupers.

8

9 **CHAIRMAN POWERS:** Thank you. Yes, go ahead.

10

11 **DR. PATTERSON:** Looking again at your Plots 10 and 11, you
12 conclude that F40 percent and F50 percent would be the ratios,
13 but it looks like they're actually plotting on top of each
14 other, F30 percent and F40 percent, and the catch/MSY plots,
15 and, oftentimes, I think we find ourselves kind of debating
16 about SPR levels within that range, and so my question is what
17 other sorts of information from this analysis, or from the
18 simulations that you've run, could we look at to try to
19 determine where these reference points fall out equally? What
20 should be the decision? Should we err on the side of F40
21 percent or F30 percent, because, in some of these simulations,
22 it looks like they give about the same performance over the long
23 term.

24

25 **DR. HARFORD:** That's a good question, and so I think that what I
26 would do is look at the biological risk, which is the plots in
27 the center column of B over BMSY. If you look at the case with
28 the informative steepness prior, while the catch at MSY is very
29 closely aligned with a variety of those proxies, and the reason
30 is because of the relatively flat top of the production curve,
31 you do see separation when it comes to biological risk.

32

33 You can see it when you compare the gonochoristic stocks, and
34 so, if you compare the 40 percent to say the 30 percent, you can
35 see that a non-trivial amount of the biological distribution
36 falls below BMSY, and you can also look at it from the
37 perspective of the other extreme. If you were to look at the
38 F60 percent, biomass sits well above BMSY, and so my advice is
39 that, where catch is sort of equivalent between some of these
40 options, biomass risk is not equivalent.

41

42 **DR. CALAY:** Thank you very much for recognizing me, and I
43 realize that I'm not a member of the SSC, but I have a question
44 for you, Bill, about your assumption regarding asymptotic
45 selectivity. In many of our fleets in the Gulf of Mexico, there
46 is certainly evidence of a dome-shaped selectivity pattern, and,
47 in my thinking, I would imagine, if you put a dome-shaped
48 selectivity pattern into your analysis, that the results could

1 support somewhat lower SPRs, and is that intuition correct, or
2 am I mistaken?

3
4 **DR. HARFORD:** Yes, I think that's right, because I was thinking
5 about it in terms of absolute F, and certainly, with a dome-
6 shaped selectivity, your absolute F could be higher, which would
7 then lead you to choose a lower proxy, and so, if your
8 asymptotic is 40 percent SPR, you could look lower than that if
9 you had a dome-shaped selectivity, and so, yes, Shannon, that's
10 right.

11
12 **DR. CALAY:** I think that's basically the basis for the Science
13 Center's position that the two types of analyses we've
14 presented, the global SPR analysis and Bill Harford et al.
15 analysis, are kind of the upper and lower bounds of what we
16 consider to be biologically-plausible limits.

17
18 **CHAIRMAN POWERS:** Thank you. Are there any other comments? I
19 think this has been very useful as we get into our discussions
20 this afternoon. If not, this is a good time to, before we get
21 into the next talk, this is a good time to take our break now,
22 and so we will break for fifteen minutes and come back at
23 roughly twenty to.

24
25 (Whereupon, a brief recess was taken.)

26
27 **CHAIRMAN POWERS:** I believe this is Matt Smith who is giving the
28 presentation, rather than Dan, and so, Matt.

29
30 **ESTABLISHING STOCK STATUS DETERMINATION CRITERIA FOR FISHERIES**
31 **WITH HIGH DISCARDS AND UNCERTAIN RECRUITMENT**

32
33 **DR. MATT SMITH:** Thanks, Joe. Dan had to be away in Alaska this
34 week, and so we're all sorry for Dan. I will be filling in for
35 him this afternoon. This is a presentation that this body has
36 seen before, in one or possibly multiple different forms, and we
37 have brought it up several times now, and it's something the
38 Center is behind and we're trying to sort of get adopted, if we
39 can, and so I'm going to go over it again, and it's part of this
40 reference point discussion that we're having this morning.

41
42 Just a little bit of background, and then we'll get into the
43 nitty-gritty. Magnuson-Stevens requires that we rebuild the
44 stocks to a biomass level that is consistently able to provide
45 MSY. The little graphic there on the side is one from the
46 paper, and the paper itself is a couple of years old now, and so
47 this might have changed somewhat since then, but the take-home
48 is, for the Gulf and Caribbean, you can see that we have about

1 half of our stocks that are SPR-based and the other half are
2 catch-based, and there are a few MSY-based and a couple of
3 others.

4
5 There is a mix across different Centers to determine what
6 they're using to kind of use as MSY and MSY proxy, and it varies
7 from Center to Center, but then sort of what is MSY? The law
8 itself, there are a lot of words, a lot of definitions, but, if
9 you read through it, there is no sort of formal codified
10 equation or definition of MSY. It's not properly defined in the
11 act, or it's not formally defined in the act, and so it leaves
12 it up to some interpretation by the end user group, this body
13 and the council.

14
15 One of the things in the crux of this paper is the use of a
16 global maximum sustainable yield and not necessarily, as we'll
17 see later, the adoption of the sustainable yield itself, but the
18 biomass associated with that, and this global MSY is
19 advantageous, because it depends only on growth, natural
20 mortality, the relationship between the spawners and the
21 recruits and the removals by an optimized fishing fleet, and so
22 we use the fleet with a knife-edge selectivity set at an optimum
23 age to fish the stock.

24
25 In the lower right-hand portion of the screen is the red snapper
26 from the paper that we did this initial analysis version of the
27 global MSY, and so, as you can see in the left-hand panel there,
28 the yield associated with that is -- I believe it's about
29 thirty-five million pounds, which is not something we anticipate
30 or recommend trying to take out of the stock, but the part that
31 comes into play later and forms the foundation of our
32 recommendations from this paper is on the right-hand side of
33 that, and that is the SPR that is associated with that level of
34 removals and this global MSY scenario, which comes out at 24
35 percent, I believe.

36
37 Currently, in the absence of a global MSY-type approach, we
38 have, especially with red snapper, used several other different
39 kinds of MSY-type analysis to try and get at what an appropriate
40 reference point for the stock would be, and those two, or the
41 two most commonly used ones, have been this MSY fixed discards
42 approach and MSY linked discards approach, and they differ in
43 how you treat your discards, essentially.

44
45 Again, this is critical for a species like red snapper in the
46 Gulf and several of our other fisheries, especially in the Gulf
47 of Mexico, where we have very complex fishing dynamics, with a
48 lot of discard and bycatch fleets.

1
2 Down at the very bottom, just to emphasize that point, and I
3 know many of us are aware of these, but you can see that the
4 fleets -- There are eight directed fleets on the left-hand side
5 of those two graphs and six different bycatch and discard fleets
6 that are actively removing stuff from the stock at varying
7 levels of magnitude, in terms of their total contribution to
8 mortality, and there are complex and messy fisheries in the Gulf
9 of Mexico, in many cases.

10
11 With the fixed discard approach, discards are treated similarly
12 to natural mortality, in that they are removed from the biomass
13 pool prior to trying to maximize yield, and that can have
14 unintended consequences, which we'll look at later in some
15 graphs, where you basically pit the directed fleets directly
16 against the discard fleets, and their fishing mortality and
17 their effort will ramp up, because they are trying to maximize
18 their yield after that discard and bycatch yield has been
19 removed from the pool.

20
21 The linked scenario is the other option that has been used in
22 the past, and that says, well, we're going to just adjust up and
23 down accordingly all of the fleets, and so it assumes that you
24 have control over your discard and your bycatch and you can
25 increase or decrease the amount of mortality from those fleets.

26
27 There may be some truth in that, in terms of discards from the
28 directed fleets, and it's very hard to have direct control over
29 something like the shrimp fleet, in terms of Gulf of Mexico
30 management and how that impacts bycatch mortality.

31
32 Because we very often do not have good stock-recruit
33 relationships in the Gulf of Mexico, a lot of our management is
34 based on SPR proxies, and, again, most of you all are familiar
35 with this. They are based on life history, and they can come
36 from analyses or some sort of assessments, based on life history
37 parameters. They do not need to account for the spawner-recruit
38 relationship, which is the best part about them, because we very
39 rarely have good information on that.

40
41 They serve the goal of trying to maintain SSB within a safe
42 biological limit, while limiting foregone yield, and they are
43 based largely off of this Clark's min-max approach, which was
44 published a while back, in the early 1990s, and they establish
45 decent ranges for most species.

46
47 The targets that we choose from SPR-based analyses can sometimes
48 be arbitrary, and I think that's something that this body and

1 other bodies have struggled with, is trying to find good
2 science-based directions for SPR-based proxies that aren't just
3 sort of rolled into what would be 30 percent this time, or 40
4 percent this time, and we're searching for an answer to get away
5 from that kind of arbitrary selection of these proxies.

6
7 MSY for red snapper, and I've said a lot of this already, is
8 problematic, and, again, this holds for other species that we
9 manage as well. It's problematic because the stock-recruitment
10 function is not well defined, and the conditional MSY approaches
11 that we have been using in the past, that fixed discards and
12 linked discard approach, provide wildly different results, in
13 terms of what the target that we should be shooting for, in
14 terms of SPR, because of the different fisheries and the
15 selectivities and assumptions you have to make about spawner-
16 recruitment relationships.

17
18 The project goals from this paper would try and illustrate,
19 first off, how the complex fishery dynamics in the Gulf and
20 other places make selecting the choice of an MSY metric
21 difficult and then to demonstrate an alternative approach that
22 we have been kicking around at the Center and have produced this
23 paper and are starting to implement with the stocks that we
24 assess now to set a lower bound, and even a range, on what
25 viable SPR proxies could be for most of the stocks that we
26 manage that conform to the Magnuson-Stevens Act guidelines.

27
28 Methods for this, all the MSY projections were performed with
29 Stock Synthesis, and so it is easy to do. The global MSY
30 process that we undertake as part of this analysis can be done
31 right within the Stock Synthesis framework, which is what we're
32 currently using for all of our assessments, and so it's not all
33 that difficult to conduct.

34
35 For red snapper specifically, which is what we're going to see
36 results from, because it's where we did the analysis, it was
37 based on the 2014 update, and nothing would dramatic would
38 change if we did SEDAR 52, but it's just the time when the paper
39 was done, and that was the most recent stock assessment.

40
41 Recruitment was based on the Beverton-Hold stock-recruitment
42 curve with varying levels of steepness, and we did three
43 different levels of steepness in the paper as a demonstration of
44 how you can use this method to set bounds on SPRs. Then the
45 relative fishing mortality was retained in constant proportion
46 throughout the projections.

47
48 Like I said before, there are eight directed fleets, four in

1 each of the east and west components of the Gulf of Mexico and
2 three discard fleets, for a total of six, with three each in
3 each of the east and west component of the Gulf of Mexico.
4 Selectivities for those fleets are shown there, and you can see
5 there is some consistency amongst sectors.

6
7 Commercial is in the top-left and recreational the top-right.
8 The discard fleet is in the bottom-left, and then shrimp is off
9 by itself in the bottom-right. They do differ quite a bit,
10 although there is some consistency amongst sectors, but the
11 fleets have different selectivities, which we would expect.

12
13 Now we're starting to get into some of the results from the
14 paper. This first graphic here is with a steepness of one, and
15 so it's essentially a yield per recruit analysis. The blue-
16 dashed line is this global MSY that we introduced in this paper,
17 and the red-solid line is the fixed bycatch, I believe, and the
18 black-dashed line is the linked bycatch scenario, and so it
19 immediately starts to illustrate some of the problems with the
20 situation we have now, and that is that the fixed bycatch and
21 the linked bycatch scenarios differ dramatically, and both had
22 somewhat equal footing, in terms of being plausible options for
23 red snapper.

24
25 During the last few years of discussions that I can remember
26 around this conversation, SPRs near that red line from the fixed
27 bycatch, in the 0.12 to 0.15 range, were being actively
28 considered as reasonable SPR proxies for this species, because
29 there was published and established scientific methods that gave
30 you that result as a conditional MSY value for the stock.

31
32 The global MSY, and this is probably just by coincidence in this
33 example, comes out very close to the MSY linked, and I don't
34 think that's a general rule of thumb that would carry on amongst
35 all stocks, but, in this scenario, they came out very similar,
36 and, obviously, the magnitude of the removals differs
37 substantially. Like I said before, we're never going to achieve
38 that thirty-five-million-pound removal from the global MSY, but
39 the target would be to look for whether or not we can maintain
40 the SPR from it, which is a pretty easy thing to do, once you
41 have established that SPR.

42
43 This one is very difficult to see, and this is the two other
44 steepness scenarios, the 0.85 scenario in the top-right and the
45 0.7 scenario in the bottom-right, and, really, the only thing to
46 take home from this is something that you would imagine would
47 happen anyway, is that, as those steepness values decline from a
48 maximum value of one, the SPRs that are sustainable with the

1 associated methods get larger and larger, which makes just
2 intuitive sense. This is the foundation for the prospect that
3 we can use this to set, potentially, bounds on what an
4 appropriate SPR for a stock would be, given varying levels of
5 steepness.

6
7 Also, in the paper, we did a couple of sensitivity scenarios,
8 and the biggest one of those was to see what happens to these
9 methods as bycatch increases, and so this slide is the sort of
10 result slide from a high-bycatch scenario, and the biggest take-
11 home from this is that the original base scenarios for fixed
12 bycatch and the linked bycatch, and fixed bycatch is the solid-
13 red and linked bycatch is the long-dash-short-dash lines that
14 are much higher on the yield curve, that, when you ramp up
15 bycatch and discards on a stock, or if they are higher than you
16 believe them to be, the fixed discard method results in
17 extremely low estimates of sustainable SPR, and, again, that's
18 because it causes those fish to be removed and treated very
19 similarly to a removal from natural mortality, and the directed
20 fleets are trying to compete against that, to maximize yield,
21 and so they will fish the stock down dramatically in that
22 scenario.

23
24 The MSY linked has sort of the alternate approach, where it
25 actually becomes somewhat more conservative, with a higher SPR
26 being estimated as bycatch increased, and that's because all of
27 the directed fleets and the discard and bycatch fleets are
28 adjusted together, and so, as those discards go up, the directed
29 fleets go up, and, conversely, they are allowed to bring the
30 discards down.

31
32 **CHAIRMAN POWERS:** Matt, for the sensitivity, how much did you
33 increase discard?

34
35 **DR. SMITH:** For that specific slide, it was a dramatic increase.
36 It was like a fifteen-fold increase, and it was done to
37 exacerbate the situation, to demonstrate the sort of intrinsic
38 issues with the two different modes, and so it should never be
39 expected to see something that dramatic. It was for the
40 purposes of putting together a publication slide. We really
41 wanted to push it.

42
43 Is there a best proxy for MSY? Our conclusions from this was
44 no. Each one of them has their flaws. Without a stock-recruit
45 function, we can't actually estimate MSY, and so that one is out
46 the door until we get a functioning stock-recruitment
47 relationship.

48

1 The MSY global, in terms of removals, is unobtainable, in
2 practice. We clearly don't have a knife-edge optimized fleet
3 fishing in the Gulf of Mexico for red snapper. If we did,
4 people probably wouldn't complain about it, because they would
5 get thirty-five million pounds of fish, but we don't, and nobody
6 does, at least not in the Gulf.

7
8 The fixed discards, like we just showed, the issues there is
9 that that can lead to these unsustainable proxies, if bycatch
10 and discards are high or if we have productivity overestimates
11 that were exacerbated at high steepness, which we often default
12 to. It wasn't quite as bad at lower steepness, in terms of its
13 performance, and the MSY linked relies on our ability to scale
14 the Fs on all fleets, which, like I said earlier, is sort of
15 outside of the realm on how we can scale shrimp discards and
16 closed-season discards and things of that nature.

17
18 The biggest take-home from this paper was the utilization of
19 this SPR MSY global approach, which essentially flips this Clark
20 min-max method and focuses on the SPR MSY, and so the biomass
21 associated with that MSY, rather than the MSY itself.

22
23 One of the very nice things about this is, when bycatch rates or
24 discard rates change the projected SPR target, that MSY global
25 target will remain constant, because it is estimated in the
26 absence of bycatch and discards, and it's based solely on life
27 history in that optimized fishing fleet, and it allows us the
28 ability to set a range of targets, like I was saying earlier,
29 and so the lower-left-hand graph here shows the results from red
30 snapper, and the red line on the far left, the vertical red
31 line, is the SPR associated with the maximum yield per recruit
32 analysis, and so a steepness of one, and, for red snapper, that
33 came out at 24 percent, and then the green vertical line is a
34 reasonable upper bound, and that came from the analysis done
35 with a steepness of 0.7.

36
37 You can use, from species-to-species, expert judgment on what
38 reasonable bounds of steepness are for that stock to basically
39 set yourself a limit or a range of plausible SPR values that
40 then the SSC or the council body can decide what is most
41 appropriate for the management of that stock.

42
43 This is just sort of summary stuff coming up here, and, like I
44 think I've said before, the SSB at MSY global is attainable,
45 even though the associated yield is not. It's inherently
46 sustainable, and we believe it's inherently sustainable, because
47 it is the SSB derived from where birth rate equals death in an
48 optimized fishing fleet will rebuild the biomass to levels that

1 provide for MSY, thus fulfilling the Magnuson-Stevens Act
2 requirement.

3
4 It's time-invariant to the SPR target over the rebuilding
5 schedule. Like I said before, if we were using one of those
6 conditional MSY methods, if you updated it every couple of
7 years, and there was new information on discard rates or on
8 bycatch rates, the actual SPR target from that analysis would
9 change through time, which is not ideal.

10
11 Once you have established this SPR target using the global SPR
12 approach, you would calculate the yield stream that you would
13 use for management, the same way we've been doing it recently,
14 which is to use our MSY fixed discards over a short timespan to
15 get the associated yields that go along with the SPR target, and
16 then, finally, the resulting SPR MSY global, when a Beverton-
17 Hold stock-recruitment function is assumed with a steepness
18 value of one, and so that maximum yield per recruit type
19 analysis for this approach, we believe it could provide a good
20 lower bound for what SPR levels should be considered for a
21 fishery.

22
23 This is just sort of reiterating what we already talked about,
24 but it's showing -- The curves on this graph are the fixed SPR,
25 or the fixed discard, curves that we would use to generate
26 yields for our stocks, with the yields shown in the little gray
27 dots on the curves, and so each curve here is one of the curves
28 from the different steepness of one, and so you've got an
29 analysis done with a steepness of one in the solid black line,
30 and the long-dashed analysis is done with a steepness of 0.85,
31 and the short-dashed analysis is done with a steepness of 0.7
32 and the yields associated with them and the little gray dots,
33 which are somewhat hard to see, but they're all very similar,
34 and, again, the most important thing is the SPR range that you
35 can derive from this analysis to provide advice on appropriate
36 reference points for the stock.

37
38 The final conclusions, and I'm somewhat reiterating, but the SPR
39 associated with that SSB at MSY global we believe can be a
40 useful proxy as an MSY proxy. It adheres to the Magnuson-
41 Stevens and the reauthorization act guidelines.

42
43 When productivity is uncertain, which is the case for most of
44 our stocks, SPR MSY global associated with that steepness value
45 of one can provide a good lower bound on what an acceptable SPR
46 value should be for the stock, and, for the specific case of red
47 snapper, the current SPR of 26 percent lies within the bounds
48 that came out of this analysis, which was 24 to 38 percent, and

1 so we believe that that value, as it stands right now, is a
2 perfectly plausible SPR proxy for red snapper.

3
4 We started to do this for some of the other species that we do
5 assessments, and we don't have a wide pool of testing from, but
6 we believe this methodology is applicable to all of the stocks
7 that we do and that it can provide additional information to
8 help make these decisions when it comes time to reevaluate
9 reference points. I believe that is it. Thank you for your
10 time. Any questions? I would be happy to take them.

11
12 **CHAIRMAN POWERS:** Thank you. This sort of brings back old
13 memories, because a lot of the issues with red snapper shrimp
14 bycatch, the issue of linked versus unlinked was a big deal,
15 because, essentially, the council chose to have a bycatch
16 reduction target, and that was kind of a set-aside, and then you
17 would optimize off of the directed fisheries.

18
19 In the case of red snapper, there is a big discrepancy in terms
20 of what the F values were for ages-one to two for the bycatch,
21 versus the others, but it occurs in all fisheries, and so you
22 will have different selectivities, and red snapper was more of
23 an extreme, I think, and so what this paper is trying to do is
24 say -- Well, regardless of how you choose to manage it, the
25 biomass estimate of MSY, which what this paper is trying to do
26 is to stabilize that, based on the global aspects, and what I
27 think the results are is that, yes, you can stabilize it, and it
28 makes logical sense, and it kind of keeps things from being
29 jerked around by changes in selectivities, and so that's sort of
30 the motivation, I think, here. One question I have is this has
31 actually been implemented already for other stocks, hasn't it?
32 Shannon.

33
34 **DR. CALAY:** Yes, it has. We have done it for gray snapper, and
35 maybe some others, but I think we've done it for at least three
36 different stocks now, most recently gray snapper. Gray
37 triggerfish in the previous assessment, but not yet for the one
38 that's underway.

39
40 **DR. NANCE:** Those don't have the same bycatch issues, do they?

41
42 **CHAIRMAN POWERS:** Gray snapper doesn't, but gray triggerfish
43 does. Thank you. Will.

44
45 **DR. PATTERSON:** For gray triggerfish and gray snapper, did you
46 also utilize that 0.7 to 1.0 range for the plausible SPRs, I
47 mean steepness. Excuse me.

1 **DR. CALAY:** For those species, we only did steepness close to
2 one, to establish the lower bound.

3
4 **DR. PATTERSON:** It's interesting to me that you end up with this
5 range from 0.7 to 1.0, and those are the endpoints of what are
6 being called plausible bounds, with a midpoint at 0.85, and, if
7 you go to the Shertzer and Conn meta-analysis, the midpoint is
8 0.84, but you have this broader distribution with a long tail
9 toward 0.2, and so the take-home advice would be quite similar,
10 except, in that case, if you actually put the Bayesian prior in
11 the analysis, it has a central tendency, versus just all these
12 things are equally -- You are basically suggesting they are
13 equally likely, when they probably aren't.

14
15 **DR. SMITH:** Yes, I think that's a good point. They probably are
16 not equally likely. Certainly the approach that we have
17 implemented for the other species, with the steepness of 0.1,
18 the yield per recruit type analysis, has a way to set a lower
19 bound holds, the ability for this to be used as a way to
20 establish a plausible range, and it's possible that that type of
21 approach would be more appropriate for that, and it's just a
22 suggestion of an extension of this analysis that could be done,
23 and it can be done rather quickly, and it can be done as a part
24 of every assessment that we do, where the analysis potentially
25 could as well, and I don't know for sure, but a way just to
26 establish the range, if this committee wants a range to help it
27 make decisions, in terms of reference points.

28
29 **DR. PATTERSON:** The thing that we've experienced in the past,
30 when we've run different types of analyses that we think may be
31 plausible to a greater or lesser extent, and, if we produce a
32 range, then we're often asked, well, what about the proxy at
33 steepness 1.0, because then you have this catch level versus 0.7
34 at that part of the range. If they're all equally plausible,
35 then there are tradeoffs, and so there are tradeoffs in the risk
36 to overfish the stock, or to deplete the stock, but then the
37 other tradeoff is, if you're more precautionary, then you have
38 foregone yield.

39
40 Depending on who is making the decision or what the perspective
41 is of the various managers that is collectively making the
42 decision, it could be that foregone yield is more important than
43 risk of depletion, and so it becomes this political discussion.
44 If we say all of these are equally plausible, then why not pick
45 this one, or why not pick that one? It seems to me that it
46 causes other issues eventually.

47
48 **CHAIRMAN POWERS:** I think, to some extent, that is, or should be

1 anyway, addressed by the working group that Rick was talking
2 about and integrating it across uncertainty, and it's precisely
3 that kind of thing, is that there is a perception, if you give
4 somebody a range, that they're all equally likely, and we have
5 to be careful about that.

6
7 **DR. METHOT:** To just go on a little bit on that, we have a long
8 history of the MSY determination being a strictly science-based
9 process and not one that leaves open the issues of, well, how do
10 we allocate the yield within this MSY, and it's certainly
11 something that is fully in the council arena, but the
12 determination of the MSY itself and all the things associated
13 with it has always been tackled entirely within the science-
14 based process, but this work is really exposing the limits to
15 which you can continue to follow that.

16
17 **DR. PATTERSON:** In that context, you have this social and
18 ecological -- These two domains that are sort of the yin and the
19 yang trying to inform the fisheries management process, but
20 there is quite a bit of analysis and information that's coming
21 in from the population dynamics and stock dynamics side of this,
22 but, even in this room, we often don't have the social
23 component, or even the economic component, of what the
24 implications of decisions might be, and so, that part of the
25 uncertainty, we don't ever quantify or give advice -- I
26 shouldn't say "don't", but it's much less common that we have
27 that type of information to provide advice about.

28
29 **CHAIRMAN POWERS:** Good point. Benny.

30
31 **DR. GALLAWAY:** This was a great paper, and it got extremely high
32 reviews when it was out for review, and it was a great
33 presentation and summary of the paper as well. I think people
34 would be disappointed if I didn't raise one of the caveats
35 mentioned in the paper, that the effects of juvenile density-
36 dependent mortality has yet to be addressed and would have a
37 very important bearing on the final estimates, and so I would
38 speak to that there should be some urgency and after several
39 years of recommendations from stock assessment review panels
40 that density dependence should be addressed.

41
42 **CHAIRMAN POWERS:** What Benny is referring to is, if you have --
43 During the recruitment process, if you have density-dependent
44 mortality going on, if it's like a Beverton-Holt, and you can
45 have different density-dependent mortalities over different
46 stages, but it all kind of gets washed out, and you still have a
47 Beverton-Holt stock-recruitment relationship at the end, over
48 the whole time period.

1
2 However, if you have catches during that time period, it changes
3 things considerably, and, in the case of the shrimp bycatch,
4 where you're having catches in the zero and one age range, when
5 you were considering that this was the recruitment process, it
6 really does change things, and that's an important issue.

7
8 **MR. GREGORY:** Could you go to Slide 7? This question is for
9 people more familiar with the red snapper stock assessment in
10 general, and not just for Matt, but the graph of spawning
11 recruits looks pretty good, to me. I mean, I don't understand
12 why everybody has jumped to the conclusion or assumed that you
13 can't determine a spawner-recruit curve, and so take it with a
14 grain of salt, but it looks like -- It's not circular, and it
15 has the basic shape of a Beverton-Holt curve. I mean, did that
16 generate this data, or is this data independent of the steepness
17 that was used or estimated?

18
19 **CHAIRMAN POWERS:** I think it was a steepness of one, but, when
20 you use a steepness of one, it's not saying that you think
21 steepness is one. It's saying that, over the range of your
22 estimations, you are saying that there isn't any curvature that
23 you're going to be able to detect, and so, in essence, it's like
24 saying that, over that range, you have a horizontal line, but,
25 if you go down to the left-hand corner, where that starts to go
26 down, that becomes the issue, and you don't define it by having
27 a steepness of one. Yes, it looks like a Beverton-Holt, but
28 where you define the limits and the status determination
29 criteria are not well defined by those data.

30
31 **MR. GREGORY:** Well, ask Rick to fix the model.

32
33 **DR. METHOT:** The model is fine. It's the users.

34
35 **SSC MEMBER:** (The comment is not audible on the recording.)

36
37 **CHAIRMAN POWERS:** You had a period of lots of overfishing. No,
38 I'm being somewhat cynical, but, basically, that's it. You
39 really are not going to be able to find it unless you had
40 something closer to the origin that would indicate what happened
41 at lower biomass.

42
43 **DR. FROESCHKE:** Before we started rebuilding, those data are not
44 informative?

45
46 **CHAIRMAN POWERS:** Apparently not. I mean, that's essentially
47 what you see there. Will.

48

1 **DR. PATTERSON:** Back to what Benny was talking about with the
2 juvenile bycatch, it seems to me that it's confounded here,
3 because, the period where the stock size was lowest, we had much
4 higher shrimping effort on the youngest age classes, and, now
5 that -- As the stock recovers, we have changed that dynamic, and
6 we don't have as much effort on those earlier age classes, and
7 so there is some process in there that we're not fitting.

8
9 **CHAIRMAN POWERS:** Old memories. Any other comments? If not,
10 thank you, Matt. Again, this is food for thought as we go into
11 the discussions this afternoon. I think the last presentation
12 is by Dr. Mangel, and this is by webinar. This is talking
13 generally about steepness and some of the ramifications for
14 reference points and so on.

15
16 **A PERSPECTIVE ON STEEPNESS, REFERENCE POINTS, AND STOCK**
17 **ASSESSMENT**
18

19 **DR. MARC MANGEL:** The first point is how we write the Beverton-
20 Holt stock-recruitment relationship. The way Ray and Sidney
21 wrote the relationship between recruits and total number of eggs
22 is αE over $\beta + E$, and everything I'm going to tell
23 you on that slide also applies to the Ricker, if that's your
24 preference. In this stock-recruitment relationship that Ray and
25 Sidney wrote, α is the number of recruits as eggs become
26 infinite. Now, that's actually a hard thing to know what's
27 going on.

28
29 **MS. SCHIAFFO:** Give me a moment, Dr. Mangel. The presentation
30 is freezing up. Give me just a moment.

31
32 **DR. MANGEL:** Okay. Do I understand that Rick Methot is there?

33
34 **DR. METHOT:** In the flesh.

35
36 **DR. MANGEL:** So you've heard this talk back in March, with minor
37 modifications to date.

38
39 **CHAIRMAN POWERS:** Charlotte, let us know when things are set up.

40
41 **MS. SCHIAFFO:** All right. I think it should be working now.

42
43 **DR. MANGEL:** Okay, and so we should be at Slide Number 6, which
44 has a picture of Brian Rothschild's book, the cover of Brian's
45 book. If we go to the next slide, the way Beverton and Holt
46 wrote this relationship is α over β is the maximum egg
47 survival, which you can see as the number of eggs get smaller
48 and smaller.

1
2 When Jon Brodziak and I started to think about steepness again
3 about a dozen years ago, we wrote the relationship just slightly
4 differently, and so, there, you should see another equation for
5 recruitment as a function of total eggs, and now it's alpha
6 times E divided by one plus beta times E.
7
8 The reason for doing this will become really crystal clear as we
9 go, but, right now, alpha is a measure of the maximum egg
10 survival, and beta is the number of eggs giving half of that
11 survival, and these are easier to measure and easier to compute.
12
13 Thing Number 2, and I may be repeating some stuff that came
14 earlier today, but the maximum per egg survival depends on the
15 early life history, and so, again, alpha is maximum egg
16 survival, and, if we let S_{ER} of tau be the egg survival, and so
17 tau of the egg to recruit interval -- I just got disconnected,
18 maybe, and did anybody hear me about --
19
20 **DR. BARBIERI:** Yes, we can hear you, Marc.
21
22 **DR. MANGEL:** If we let τ_{ER} denote the length of the egg to
23 recruit interval --
24
25 **CHAIRMAN POWERS:** Marc, let me interrupt here. I think we're
26 having trouble aligning what you're saying with what's showing
27 on the screen.
28
29 **DR. MANGEL:** Okay. I should be at Slide 16 now.
30
31 **CHAIRMAN POWERS:** I think, Marc, when you say, "next slide", you
32 should say if it's like Thing 1 or Thing 2, because that's --
33
34 **DR. MANGEL:** All right. Thing 2, and the slide I'm looking at
35 has, after "Thing 2", in red, it has four lines, the last line
36 of which is alpha is equal to S_{ER} of τ_{ER} . In my presentation,
37 it's Slide 16. Are we there?
38
39 **CHAIRMAN POWERS:** Yes.
40
41 **DR. MANGEL:** Okay. Now, if we go to the next slide, it's still
42 Thing 2, and it should show a citation to Michael McGurk's 1986
43 paper, which basically shows how to find that. Still Thing 2,
44 the next slide, shows McGurk's plot, which is dry weight across
45 twelve orders of magnitude fit to the rate of natural mortality,
46 and so that basically gives us size-dependent mortality during
47 the egg to recruit phase.
48

1 Still Thing 2, the next slide, there is a differential equation
2 then that the rate of change of survival is minus the rate of
3 natural mortality times survival, and so this is -- Since
4 mortality is size dependent, we need some kind of growth model
5 within the egg to recruit phase, and so it should say, if the
6 egg to recruit interval growth is exponential, then the mass at
7 any time during that phase is the initial egg or larval mass
8 times E to some growth constant times where you are in that
9 phase.

10
11 The point of all this is that we can then compute survival
12 during the egg to larval phase by knowing the initial egg larval
13 size and the size at recruitment, and so we combine that growth
14 model with McGurk's survival model, and we can get, basically,
15 alpha. Relevant to what was discussed about shrimp, as I was
16 coming on, if there were fishing during this phase, we could
17 actually include fishing during that as well.

18
19 Let's go to Thing 3 on the next slide, which is, as soon as you
20 have demographic data for a stock, you have a point estimate for
21 steepness. Here is what I mean by demographic data, and I'm at
22 Slide 25, and this should just be something that says,
23 "demographic data" and then a big bracket.

24
25 You need to know maximum age, survival to any age, length at
26 age, probability of being mature at age, the length-fecundity
27 exponent, the specific fecundity at age, and so those are all
28 standard demographic data that we collect on lots of fish.

29
30 Knowing these is sufficient if you have a mechanistic model for
31 steepness, and that's what those two papers in 2010 and 2013 do,
32 and here's the formula for steepness, and so you can think of
33 this as alpha -- You can compute from that egg to recruit
34 survival, and then everything is just standard demographic
35 information, and, if you look at this expression, that summation
36 from a equals zero to A_{max} of survival times length to the power
37 times probability of being mature times fecundity, that is
38 basically lifetime egg production of an individual, and so the
39 demographic information gives us steepness.

40
41 Let's move to the next slide, which is Thing Number 4, which is,
42 with that formula, and just by simulation, one can actually
43 compute distribution for steepness, and I will give you a few
44 examples now. There is the formula again.

45
46 Here is a distribution for steepness for bluefin tuna that
47 appeared in our 2010 paper. Here is a distribution for
48 steepness that Jon and some colleagues did for striped marlin a

1 few years later. Here are two distributions for steepness for
2 blue shark published about two years ago, and the difference
3 between these is whether the Beverton-Holt or Ricker stock-
4 recruitment relationship is used, and I will just mention that
5 Kai has another paper that I recently reviewed, and, in addition
6 to using different stock-recruitment relationships, he uses a
7 different growth formula, because, if you look at the formula
8 for steepness, you see that L of a appears in that formula, and
9 so different growth relationships will also give you different
10 distributions for steepness.

11
12 Let's move to Thing Number 5, which is that you can specify both
13 natural mortality and steepness in a system that in a stock
14 assessment could lead to problems, or even worse, and so here's
15 my formula, again, for steepness on the standard age-structured
16 model. Now, if we write our survival in its usual way, then we
17 get that survival to age A is a product of survival from one age
18 to the next, where, in principle, the rate of mortality depends
19 on each particular age. In the case of constant mortality, then
20 all of those M of a is just some number M .

21
22 Again, the formula for constant mortality, now I just put in
23 constant mortality, and, of course, everybody will recognize
24 that, and so now imagine you've got all of those demographic
25 parameters fixed, and so we could fix natural mortality, the
26 value of M , and then we'll automatically get a value for H , or
27 we could fix H and then look at the right-hand side, and we
28 should be at Slide 45, and we could fix H and then look at the
29 right-hand side as an equation for defining M implicitly.

30
31 What happens if we try to fix both of them? Well, if we fix
32 both of them, then you're kind of over-specifying the system.
33 If you are very lucky, things may just work, but it's kind of
34 slippery, because, as I said, you have over-specified the
35 system. If you're not lucky, your model will go crazy, because
36 the right-hand side was telling you one thing, and the left-hand
37 side, which you have specified also, was telling you another,
38 and so we need to be careful about simultaneously specifying
39 both of those things.

40
41 Let's move to Thing Number 6. Thing Number 6 is that, although
42 production models are not fashionable currently, and I am
43 actually right now living in a world which is kind of like 1984,
44 in terms of the internet, and in terms of computing too, and
45 production models can actually teach us a lot.

46
47 Here is -- The production model that I'm going to use is the
48 following, and I am going to write N for the number of

1 individuals, and I am going to have it increase according to
2 that same Beverton-Holt and then have a constant rate of natural
3 mortality.

4
5 The number of eggs will then be the productivity times the
6 number of individuals, and then, if I define α_P and β_P to
7 be α times ϕ and β times ϕ , in Slide 55, I get to an
8 equation that just involves N on both sides, and that dN and dt
9 is αP over one minus βP times M times N , and I will
10 just point out that, if β times --

11
12 (Part of Dr. Mangel's comment is not audible on the recording.)

13
14 **DR. MANGEL:** -- the denominator on the right-hand side, you end
15 up with the Schaffer model, and so this is sort of a natural way
16 of actually getting the Schaffer parameters from something that
17 looks like a Beverton-Holt stock-recruitment relationship of --

18
19 Let's go to the next slide. This just solves for the steady
20 state of this equation, which I am going to denote by N_0 , and
21 then the steady state is determined by the ratio of α over
22 M , and so one, and one over β , but notice how they separate,
23 and so α over M is basically the maximum productivity that
24 the stock can have divided by the rate of natural mortality, and
25 so the only way you can have a positive steady state is if that
26 ratio is bigger than one.

27
28 β is a measure of the strength of density dependence, and so
29 that basically scales how high the steady state stock size is
30 based on αP over M , and so, for example, with the
31 California Current, one of the things that was true about the
32 *Sebastes* stocks forty years ago, or fifty years ago, was that
33 they had very, very high standing stocks, and nobody realized
34 how low their productivity was, but you could just look at this
35 formula and see that, if α is only slightly bigger than M ,
36 the thing in brackets is still bigger than zero, but, if β is
37 very small, you could have an enormous standing stock for a not
38 very productive species.

39
40 The next slide is α over M , and that's one over β , and so
41 now I'm at Slide 59, still on Thing Number 6, and this nice
42 separation is the reason for writing the Beverton-Holt as I did.
43 Let's go to the next slide. For this production model,
44 steepness can be determined actually analytically, and, if we go
45 to the next slide, there is the formula for steepness.

46
47 Steepness is the ratio of productivity to M divided by four plus
48 the ratio of productivity to M , and the four comes in there

1 because of the definition of steepness relying on 20 percent of
2 spawning stock biomass, and this is has a very sweet
3 interpretation, very simple.

4
5 Let's go to the next slide, which is that clear reference points
6 come from this production model, and that is that you can do --
7 The next slide is where I show basically unfished biomass,
8 again, and, if you do just a little bit of work with calculus,
9 you can find that FMSY over M is given exactly as a function of
10 steepness by the right-hand slide, and so we're at Slide 64.

11
12 If we go to the next slide, we find, also, that the number of
13 individuals at maximum net productivity divided by unfished
14 number of individuals is also a function just of steepness, and
15 so now you can actually think of -- Then you have MSY over M and
16 NMNP over N zero as parameterized by steepness.

17
18 Then SPR at MSY is also given exactly by steepness, and so very
19 common reference points that come from this production model
20 completely as a function of steepness, and now I'm going to show
21 you how well they do at predicting complicated -- Let's go to
22 Slide 68.

23
24 Before I show you that, I want to show you one other thing that
25 -- This is added since Rick heard the talk, and so, if we go to
26 the next slide, I am showing now the plane of SPR MSY and BMSY
27 over B zero and targets for different Pacific coast groundfish.
28 That line is the curve of these two relationships that comes
29 from the production model with different values of steepness,
30 and these points, the points and the species names, are the
31 actual targets that are in the groundfish management plan. The
32 point of this is that actually none of them hit on the Beverton-
33 Holt stock-recruitment relationship from steepness.

34
35 This ongoing work with E.J. Dick and Nick Grunloh and me is
36 asking how much of a difference would it make if you had a
37 different stock-recruitment relationship that hits the reference
38 points.

39
40 The next slide raises this question, again, of how good of an
41 approximation is the production model, and maybe these points
42 are falling off the line because the production model is just
43 wrong, and so let's -- I apologize.

44
45 (Part of Dr. Mangel's comment is not audible on the recording.)

46
47 **MR. RINDONE:** Dr. Mangel, your audio feed is breaking up quite a
48 bit. We're having trouble understanding you.

1
2 **DR. MANGEL:** Okay, and so I am now on Slide 71. I am missing
3 two or three slides from this presentation that show how well
4 the -- If you go to the 2013 *Canadian Journal* paper, and I
5 presume that's available to everybody there, you can see some
6 comparisons with the production model and the results of Robyn
7 Forrest and her colleagues on using some complicated Bayesian
8 hierarchical models.
9
10 (Part of Dr. Mangel's comment is not audible on the recording.)
11
12 **MR. RINDONE:** Dr. Mangel, we're having a hard time understanding
13 you. Your audio feed keeps cutting in and out.
14
15 **DR. MANGEL:** There is nothing here that I'm having a problem.
16 Did anybody hear what I said about the missing slides?
17
18 **MR. RINDONE:** Bits and pieces. To the SSC members, Dr. Mangel's
19 paper, the *Canadian Journal* paper, is on the website in all of
20 the briefing materials.
21
22 **DR. MANGEL:** We can try to continue, I guess. Let's go to the
23 next slide, which is Thing Number 8, which is that setting
24 steepness equal to one is actually about as non-conservative as
25 you can get. These conclusions are based mainly on using the
26 production model. If we go to Slide 73, it shows steepness
27 again, and so steepness equal to one means α over M has to
28 go to infinity. That means either the stock is infinitely
29 productive or natural mortality is going to zero.
30
31 The next slide is $FMSY$ over M as a function of steepness, and,
32 if you look at the equation, you see that, as steepness goes to
33 one, $FMSY$ over M goes to infinity, and the notion is, of course,
34 if you have a stock that is infinitely productive, you can fish
35 it infinitely harder and still be sustainable.
36
37 The next slide is my firecracker. I am not missing slides.
38 They are just out of order. Okay. Thing Number 9 is the
39 production model predicts the results from age-structured ones
40 very well.
41
42 The next slide, Slide 78, that's the Robyn Forrest paper that I
43 mentioned, and, if you go to Slide 79, what I am showing there
44 is a plot of $BMSY$ over B zero predicted by production by using
45 the production model on the X-axis and $BMSY$ over B zero from
46 Forrest et al. It's a complicated hierarchical Bayesian model
47 on the Y-axis, and the line is the one-to-one line, and each dot
48 is one species and their analysis.

1
2 If we go to the next slide, Slide 80, on the X-axis, I have
3 shown steepness. On the Y-axis, I show SPR MSY, and the line is
4 what comes out of the production model analysis, and the points
5 are what comes from Forrest et al., and so the simple production
6 model is capturing a lot of the properties of this very much
7 more complicated model.

8
9 If we go to the next slide, Slide 81, you will see a list of
10 stock assessments for west coast species, and then, if we go to
11 the next slide, Slide 82, once again, I am showing steepness on
12 the X-axis and SPR on the Y-axis, and the curve comes from the
13 production model analysis, and the points come from the
14 complicated stock assessments.

15
16 Once again, I would say this is a warning that these complicated
17 stock assessments may be constraining themselves to function
18 very much like a production model, and that's Slide 83.

19
20 If we go to Thing 10 and think just briefly about how production
21 and age-structured models are -- I tend to think about them
22 being linked is that the --

23
24 (Part of Dr. Mangel's comment is not audible on the recording.)

25
26 **DR. MANGEL:** The point is, if you pick an age of recruitment to
27 the fishery, let's say five, you can then draw a vertical line
28 and see that, at age-five, if fish are recruited at age-five,
29 then virtually all of those growth rates between K equals one
30 and K equals three give you constant mass at age when recruited
31 to the fishery, which is likely to give you constant age at
32 maturity.

33
34 If we go to the next slide, what I have now shown is that, for a
35 sequence of age-structured models having different von
36 Bertalanffy growth rates, the relationship between steepness and
37 SPR, and, in this case, the curve comes out of the age-
38 structured model, and the points that sit on that curve come out
39 of the production model. In this case, for a von Bertalanffy
40 growth rate of 1.5 or 2.0, the production model is virtually
41 identical in prediction to the age-structured model.

42
43 Then I am almost done here, and let's go to the next slide,
44 which I call my bonus track, which is, if you don't know what
45 determines recruitment, for Beverton-Holt, the right prior for
46 steepness is basically a uniform tied down at 0.2. Let's think
47 about why that is.

48

1 Let's go to the next slide, which says how to be wrong, and then
2 Slide 89 is supposedly set H equal to one, because we say we
3 have no idea what determines recruitment. When we say H equals
4 one, we're saying that --

5
6 (Part of Dr. Mangel's comment is not audible on the recording.)

7
8 **DR. MANGEL:** R zero for recruitment when spawning biomass is 20
9 percent of unfished spawning biomass is equal to one. This
10 means we actually know a lot about the recruitment. We're
11 saying recruitment at 20 percent of unfished biomass is unfished
12 recruitment.

13
14 The proper probabilistic interpretation, Slide 92, would be the
15 following. If we go to Slide 93, if we really don't know what
16 determines recruitment, then recruitment at 20 percent of
17 unfished biomass could be any value between the unfished
18 recruitment and 20 percent of unfished recruitment, and so
19 steepness would range between 0.2 and one, but it would be tied
20 down at both ends, at 0.2, and steepness has to drop to zero,
21 because a stock can't persist, and, at one, the prior would have
22 to drop to zero, because such fish don't exist.

23
24 In other words, if we go to Slide 94, the prior would look
25 something like the picture that I have shown here, which comes
26 from a paper by Michielsens and McAllister from fifteen years
27 ago, which I did not know about, unfortunately, when we wrote
28 our paper, where they have the same intuition. If you really
29 don't know what is determining recruitment, steepness should be
30 flat.

31
32 Then that completes the talk, and the next slides are just some
33 of the citations, which I think Ryan already has for the
34 website, and I can try to answer any questions.

35
36 **MS. SCHIAFFO:** Dr. Mangel, can you hear us, because we may have
37 lost you.

38
39 **DR. MANGEL:** Yes, I can hear you.

40
41 **CHAIRMAN POWERS:** Thank you. We'll open it for questions and
42 comments. One of the key things that we should think about is
43 remember that the stock-recruitment relationship is basically a
44 natural mortality rate function, and it's a density-dependent
45 natural mortality rate function, and it depends on the slope at
46 the origin, which is the α of what we're talking about here.

47
48 Also, as the equation showed there, specifying α is the same

1 thing as specifying H, and there's a strong -- What Marc has
2 shown here is there's a strong relationship, or not a strong
3 relationship, but there is equivalence between picking one
4 parameter versus another parameter, and they are related, and so
5 you think -- If you start making too many assumptions, you're
6 making assumptions that are incompatible with each other, if you
7 start specifying alpha and age or alpha and the M value, things
8 like that.

9
10 This is where we made the comment earlier, that, when you
11 specify age, you are specifying a whole lot of things, and so,
12 with that sort of my summarization of some of the key points to
13 think about, let me open it up for questions and comments.
14 Rick.

15
16 **DR. METHOT:** Thanks, Joe. It's good to hear the presentation
17 again, Marc. You've got some good stuff here, and I'm wondering
18 if you have looked at the implications of age-specific M. It
19 seems that the analysis and the tightness of the linkage is
20 predicated on the M covering the entire age range, whereas I
21 think the way the age-structured modeling works is that the M is
22 maybe extended down to the youngest ages, but it's really only
23 operational for the older ages, the ages that are more recruited
24 into the fishery, and the steepness is more soaking up the
25 density-dependence that is happening at the younger ages, for
26 which M is effectively unspecified, and so I was wondering if
27 you have thought about it from that perspective.

28
29 **DR. MANGEL:** Yes, and let me just try to get a slide where we
30 can -- If we go back to Slide 40 or 42, any of those that give
31 the whole formula. In some sense, and I haven't thought about
32 this a lot, Rick, and so I'm really just responding, but it's an
33 interesting question.

34
35 In some sense, it takes care of all of the mortality before
36 recruitment to the fishery. Now, that summation -- If you
37 assumed that individuals are not mature until after they are
38 recruited to the fishery, then that piece of M of A would be
39 zero until the age of recruitment to the fishery, and then the
40 egg production and the early recruit survival would be
41 completely separated.

42
43 If some individuals actually get reproductively active before
44 recruitment to the fishery, then in fact there is some kind of
45 complicated interplay between the mortality and the alpha and
46 the survival in that lifetime egg production, and I haven't
47 thought about that. I will try to get Nick Grunloh working on
48 it.

1
2 **CHAIRMAN POWERS:** Thank you. Are there any other questions or
3 comments? If not, thank you, Marc, for your presentation.

4
5 **DR. MANGEL:** I am sorry that I couldn't be there, and I
6 apologize for the confusion about the order of the slides.

7
8 **CHAIRMAN POWERS:** Yes, but we have the paper, where it's all on
9 us to read the paper ahead of time anyway. It's kind of like
10 reading the Mueller Report, I think.

11
12 **DR. MANGEL:** I will take that as a compliment.

13
14 **CHAIRMAN POWERS:** Anyway, thank you again, Marc. Again, this
15 whole series of presentations is leading up to some of our
16 discussions this afternoon, and we should keep that in mind, and
17 so, at this point, the lunch is here. We will break for lunch.
18 I don't really think that we need more than an hour, and so
19 let's get back at 1:15 then p.m., Eastern Time.

20
21 (Whereupon, the meeting recessed for lunch on July 30, 2019.)

22
23 - - -

24
25 July 30, 2019

26
27 TUESDAY AFTERNOON SESSION

28
29 - - -

30
31 The Standing & Special Reef Fish, Mackerel, and Socioeconomic
32 Scientific and Statistical Committees of the Gulf of Mexico
33 Fishery Management Council reconvened at the Gulf Council Office
34 on Tuesday afternoon, July 30, 2019, and was called to order by
35 Chairman Joe Powers.

36
37 **CHAIRMAN POWERS:** We will be going through this document with
38 the idea that we're looking for is this an appropriate range of
39 alternatives that are being considered by the council, and, if
40 not, we should add to them, and, if we could make
41 recommendations for specific actions items, we should do so.

42
43 We are going to be marching through the document for a number of
44 action items and try to provide some input to the council
45 relative to those, and they all pretty much relate to these
46 presentations that we've already during the day, and so, with
47 that, I will allow John, who will lead us through the document,
48 to kind of give you a little bit of background and go from

1 there. Thank you.

2
3 **REVIEW OF STATUS DETERMINATION CRITERIA AMENDMENT: REVISED**
4 **ACTIONS**
5

6 **DR. FROESCHKE:** All right. This is the perfect follow-up to
7 lunch. There is a document on the website. What I have on here
8 is a document, and, just kind of before we get started, you guys
9 have looked at versions of this in the past, but it's very
10 different, and I just sort of want to just kind of give you an
11 update on what we've done.

12
13 The history of this is we started this in August of 2014, I
14 think, and so Steven, who is in the back, was the visionary of
15 this document, and we've worked on it, and the genesis of this
16 is essentially that we're required to establish status
17 determination criteria for stocks that we don't have it for, and
18 so this includes several stocks of reef fish and then red drum,
19 and so many of these stocks of reef fish are data poor, and some
20 of them we know less about and some more, and some have
21 assessments, and so we've tried to organize this in a way that
22 hopefully is as simple as we can, noting that as simple as we
23 can is not always simple.

24
25 I will be looking for some feedback on if there are ways to
26 better organize or better explain or streamline the information,
27 those kinds of things. If there are things that you don't feel
28 are complete or, when we get into the actions and alternatives,
29 if you feel like the range of the things that we're going to
30 present is not adequate for you all to make some sort of a
31 recommendation, either now or in the future, regarding these
32 stocks.

33
34 One of the things we sort of -- We were working on this
35 document, and then we stopped and worked on the gray snapper
36 document, which had similar actions, albeit for a single
37 species, on status determination, and so MSY, MFMT, MSST, and
38 OY, and so you guys did look through that, and, if you recall,
39 we had a cartoon diagram that we worked on and asked you guys to
40 look at a couple of times, and so the SDC hasn't been too far
41 off your radar.

42
43 We are hoping to take something, and we can get feedback from
44 you all and the council, so we can kind of develop this document
45 and hopefully run it over the finish line at some point in the
46 not too distant future, but there is a -- On the website, I
47 think it's 7(a), and it's sort of a history of the status of
48 what we've kind of worked through this, and there are different

1 items, ecosystem-related things, and I won't drag you through
2 the weeds on that, but it is there.

3
4 If you will scroll down, again, this does include both reef fish
5 and red drum, and so scroll down to -- I think there's a table
6 in there, and it's Table 1.1.1. It gives a summary of the
7 stocks in the Gulf that we do currently have SDC criteria for,
8 and it's on page 12.

9
10 I think there are seven stocks that we have completed, and then
11 gray snapper, down there at the bottom, has an asterisk, and
12 this is the one that you all reviewed recently, and the document
13 is working its way through the council process, and the council
14 is expected to take final action on this at their August
15 meeting. The MSY, you guys went back and forth on this, and the
16 council, at this point, has selected the yield at F26 percent
17 SPR, the corresponding MFMT, the MSST of 50 percent times the
18 biomass at 26 percent, and then the OY is the yield at 90
19 percent of the F26 percent SPR.

20
21 If you look at the columns, essentially, MSY, or the proxy for
22 these, MFMT, MSST, and the OY are the actions in the document,
23 and there are sub-actions in the MSY proxy, and so we'll go
24 through those, but those are the ideas of the things that we
25 need to address, and the other complicating matter to the
26 document, before we get too far in, is that some of the stocks
27 that we'll be considering are jointly managed by the South
28 Atlantic Council, and, in some instances, they have set their
29 own SDC, and so it's a little bit ambiguous as to how that might
30 correspond if we were to set a compatible SDC, and it doesn't
31 seem logical that we would set a different MSY proxy for a
32 portion of the stock or something, for example.

33
34 Those are some of the things that -- If you go to Table 1.1.2,
35 these are the stocks that are jointly managed, and it's black
36 grouper, mutton snapper, yellowtail, and goliath, and so the
37 sources of their information on which they defined the SDC are
38 there in the far-right column.

39
40 We'll have to think a little about those when we go through,
41 but, if there are no questions, I would like to start with
42 Action 1, or it's Action 1.1, and it's hopefully one of the more
43 straightforward ones. Actually, before we get there, let's go
44 to Table 1.1.3.

45
46 Table 1.1.3, if you recall, this has a long history, dating back
47 to the Generic ACL/AM Amendment, which you all labored over for
48 a long time in 2011, and this primarily deals with the data-poor

1 species that we just don't know a lot about, and so what we've
2 tried to do, or what was done in the past, is looking at a
3 series of life history information and landings and all kinds of
4 things.

5
6 There is a supplemental technical memo here on the webpage, and
7 then Nick Farmer's paper, and there's a paper as well, but it
8 essentially tried to group similar species, in terms of their
9 fishery characteristics and life history and things, together,
10 and so we're calling some of these stock complexes, and so there
11 are five of them here listed in this table, and so, the stock
12 complexes, we would be -- The way the document is set up is,
13 when we get to those, we would be setting the SDC for those
14 complexes.

15
16 There are two stocks, the other shallow-water grouper and the
17 deepwater grouper, and they have -- Within the complex, they
18 have an assessed species that we could use as an indicator, and
19 so the way that you wanted to do that, for example, was, in the
20 shallow-water grouper, if you wanted to say, well, the SDC that
21 you would define for black grouper, you would just subsequently
22 apply that to the rest of them, such that, if black grouper ever
23 became overfished, then that group, by default, would also be
24 overfished. That's the way that would work, and so that's an
25 option, but it's not a requirement, but we will get there.

26
27 Let's go to Action 1.1. Action 1, and there are three -- It's
28 page 19 of the PDF. There are three sub-actions in 1.1, and
29 they all address MSY proxies, and so 1.1 is the stocks that
30 actually have a stock assessment, 1.2 are these complexes and
31 the data-poor stocks, and then Action 1.3 is red drum.

32
33 In Action 1, there are three alternatives, and I will try to
34 explain these. Again, these reference black grouper, yellowedge
35 grouper, mutton snapper, and yellowtail snapper, and,
36 essentially, the way this would work is that, in Alternative 1,
37 you just wouldn't set an MSY proxy, and these have been assessed
38 at -- The stock assessment used F30 percent SPR, and it was a
39 recommendation. That was never codified in an amendment, and so
40 you just would leave that undefined, which really wouldn't be
41 consistent with the objectives of Magnuson, but it wouldn't
42 change what is done.

43
44 Alternative 2 would essentially just codify those
45 recommendations for the F30 percent for those stocks that we've
46 already done and management action has been taken on those, and
47 so that would reflect what's in Table 2.1.1.

48

1 Alternative 3 is a big block of words, and it's identical to
2 Alternative 2, except for this last sentence. Essentially, what
3 that would do -- That's the only difference between Alternative
4 2 and 3, and what that would do, in practice, is, if in the
5 future a stock assessment for any of these stocks is done,
6 again, and the SSC reviews the assessment and says that a
7 different SPR proxy, whether it be 40 or 20 or something, but it
8 could make that recommendation, and, if the council agreed, they
9 could simply note that in a plan amendment, and that would be
10 that, rather than having to go through a range of alternatives
11 when it doesn't always make sense if the SSC has recommended
12 something that they feel is better.

13
14 This one is actually hopefully fairly straightforward in that
15 way, in that it's do nothing, adopt what you have, or adopt what
16 you have and give you some flexibility to streamline it in the
17 future. I will stop there, if there are any questions about
18 this or if there's something that is unclear or incomplete.

19
20 **DR. NANCE:** Is Option 1 even a viable one?

21
22 **DR. FROESCHKE:** I would say it's not a viable alternative, and I
23 would note that Peter Hood is my NMFS co-lead on this, and he's
24 been a great deal of help, and Mara has contributed, as well as
25 Shannon on the Science Center staff, and so, if any of you all
26 have something -- If I say something incorrect, or if you have
27 something to add, just please let me know, and I will yield the
28 floor.

29
30 **CHAIRMAN POWERS:** I think, in the NEPA framework, you have to
31 have a no action, and so consider it as you wish, given that.
32 Luiz.

33
34 **DR. BARBIERI:** Thank you, Mr. Chairman. John, not that any of
35 this is unclear, but just to confirm, because we had this
36 discussion last time that we went through this, but I think that
37 last for future assessments, that last statement there, is
38 basically to address some of our comments that we had made at
39 some point, through the last couple of meetings, that, for MSY,
40 we are getting these estimates out of assessments that are
41 quantitatively derived, and they're based on the science and the
42 SSC review and all the data going in there and choices of
43 selectivities and all sorts of parameters, and so there might be
44 a recommendation coming out of the SSC, given conditions for
45 specific assessments, that might depart from what would be set
46 up with the -- Okay. Thank you.

47
48 **CHAIRMAN POWERS:** Thank you. Rick, did you have a comment?

1
2 **DR. METHOT:** Yes, on exactly that point, and thanks for the
3 opportunity to comment. We've been talking about this in the
4 working group a bit, and it's not enough to say yield at some F
5 level, because it's also conditioned upon what do you believe
6 the recruitment level will be that that F will be applied to.
7 Is it yield at steepness one, or steepness as estimated in the
8 assessment, or yield at recent average recruitment? Something
9 needs to be clarified with regard to expectation, or maybe you
10 leave it open, but I think leaving it unsaid about what are the
11 expectations for recruitment leave it incomplete.

12
13 **DR. CALAY:** I certainly concur, but I think we are also, in this
14 amendment, talking about establishing an MSY proxy for stocks
15 that have not yet been assessed, and so, in some of these cases,
16 I thought that the intention of the alternative was to establish
17 language that says the MSY proxy will be set to FSPR 30 percent,
18 but that the actual value might be undefined for stocks that we
19 have not yet assessed, and is that still the intention?

20
21 **DR. FROESCHKE:** Do you mean value in terms of a landings? Is
22 that what you're --

23
24 **DR. CALAY:** In terms of the actual yield at the MSY proxy that
25 would be unknown for many stocks.

26
27 **DR. FROESCHKE:** Yes, meaning the corresponding poundage that
28 that would reflect, yes, that's correct. These species would be
29 the exception, in that they do have a stock assessment, and so
30 the connection, and please correct me if I'm wrong, between the
31 yield at some SPR proxy and an actual ACL landings, or ABC in
32 this case, and OFL, those connections have been made, and so we
33 know, for black grouper, the F30 percent SPR corresponds to an
34 OFL and an ABC that was part of a stock assessment.

35
36 For the other species, which we'll get to in subsequent actions,
37 there is no stock assessment. Whatever we define, or you all
38 recommend, for the MSY proxy, there isn't an associated harvest
39 level that we know what that is, and so, for example, if you
40 were to select, for cubera snapper, which we'll get to, F30
41 percent, we can't tell you that that's 300,000 pounds of yield
42 annually. We just don't know that.

43
44 What it would do was essentially serve as a placeholder, such
45 that, when we do get an assessment for cubera snapper, either as
46 a fully age-structured assessment or something on the data-
47 limited side that could provide an MSY proxy, it would allow us
48 to move forward. Is that adequate?

1
2 **DR. CALAY:** Yes, it is, and I think Rick's point is very well
3 taken. It's something that we'll need to discuss, is whether we
4 specific, in this alternative or these similar alternatives, how
5 we're going to make assumptions about recruitment into the
6 future, because, even for red grouper in the past -- For
7 example, I think many of you recall that we have an assessment
8 of red grouper and that we have an FMSY proxy on the books, but
9 there came down a conversation about whether we would actually
10 define MSY, because we didn't trust the equilibrium projections,
11 and so that's because we have uncertainties about the
12 assumptions made and the projections, including recruitment, and
13 so that issue is still on -- We have not solved that problem
14 yet, and let's put it that way.

15
16 **CHAIRMAN POWERS:** Thank you. Again, this is more of a generic
17 discussion. These items that we're talking about here are
18 things for which there is an assessment, and correct me if I'm
19 wrong, for which there is an assessment, and a recommendation
20 for an FMSY proxy has already been made, and so I think, in
21 terms of these, our options are, one, do we want to make some
22 recommendations relative to these three alternatives and/or do
23 we wish other alternatives to be considered, and other
24 alternatives might be, well, we think we know enough to say F31
25 percent SPR and things like that.

26
27 **MR. GREGORY:** I think Alternative 3 as it reads seems fine to
28 me, because any recommendation the SSC has in a future
29 assessment is going to have with it a discussion and a decision
30 on how to project forward and what recruitment to use, and maybe
31 it would be a different recruitment method from one species to
32 the next. They may not all be the same, and I think it's
33 implied here that whatever is recommended is going to be based
34 on the assessment that's under review, and so, when the
35 discussion goes forward, I would like to recommend Alternative 3
36 at some point.

37
38 **CHAIRMAN POWERS:** That was sort of my viewpoint too, that,
39 between Alternative 3 and Alternative 2, all it is is saying,
40 well, if the science says something different, then it allows
41 the council to react more quickly to it.

42
43 **MR. ATRAN:** I have a comment and a question. The comment is, as
44 far as deciding what recruitment index to use or steepness, I
45 believe the intent was not to get too prescriptive in the
46 amendment and leave as much as possible to the stock assessment
47 on some of those parameters, and so probably the way it's
48 written right now is adequate.

1
2 The question I had is the alternative, as it's written, says the
3 flexibility to make changes in the future only applies to the
4 four species covered in this action, and is that your intent, or
5 did you want this to apply to all species, or is this already
6 accounted for somewhere later in the amendment?

7
8 **DR. FROESCHKE:** I think that's a good question. The other
9 species in the amendment don't have an assessment, and so I
10 guess I would sort of presume that they did an assessment and
11 then they did another assessment. I expect that that could be
12 generalized or incorporated to the other actions, if you felt it
13 was necessary, without too much difficulty.

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

16
17 **DR. MACLAUHLIN-BUCK:** What is the timing for this? What is the
18 council doing with this document in August?

19
20 **DR. FROESCHKE:** We had it scheduled for final action three years
21 ago, I think. No. I don't know. We have worked on it since
22 2014, and we -- Steven mostly, but, at one point, we had a
23 fairly complete draft, and then we had an OY working group, and
24 we'll go to OY, to try to figure out that, and then we figured
25 out that the South Atlantic -- There are jointly-managed stocks
26 with their own SDC, and so there are other things that we
27 learned in the process, and so, at this point, we have sort of
28 stepped back a little bit, and we're trying to get the actions
29 and the range of alternatives in a place that you all and the
30 council are sort of comfortable with, such that then we can do
31 it. I would like to get it done as soon as possible, but
32 hopefully within a year or so.

33
34 **DR. MACLAUHLIN-BUCK:** Is it an EA, or -- I guess there is no
35 effect analysis in the document that we have, and so that's
36 coming though?

37
38 **DR. FROESCHKE:** Yes, they're coming, and we had them in the
39 past, but a lot of this is quite different, and so we don't want
40 to keep rewriting those until we know what is some feedback on
41 the alternatives.

42
43 **CHAIRMAN POWERS:** Thank you. Doug.

44
45 **MR. GREGORY:** I think Steven has a good idea, that we need to
46 include a similar phrase with all of these, because the analysis
47 we have here for Alternative 3 explains how it streamlines
48 making a change without going through a major plan amendment if

1 everything is straightforward, but the other thing that
2 Alternative 3 does is it helps the SSC, in the future, from
3 falling into the trap that, well, this is what the council says
4 it is, and this is what we have to do and we can't change it.
5 We have had that problem in the past. This explicitly says the
6 SSC can recommend a change, and we don't have to just do what is
7 on the books, and so that's, to me, the most important aspect.

8
9 **CHAIRMAN POWERS:** Yes, and so, essentially, what we're
10 suggesting is the highlighted words there should be with every
11 alternative, that there is a need for that flexibility, and not
12 just for these four stocks, but in general. Do we want to make
13 that in terms of a motion then? I think that would be a useful
14 thing. Where is my motion person?

15
16 I think the motion is that -- Well, not the exact words, but,
17 essentially, the highlighted words there that whatever endpoint
18 that the council and the SSC comes to, in terms of what the
19 actual FMSY proxies are, they should have this flexibility that
20 results from when you do the assessment, that whatever the
21 assessment results are, that you can change accordingly
22 relatively quickly. Now, how does one say that in words? Doug.

23
24 **MR. GREGORY:** Can't we just take that sentence and take out the
25 species, the yellowedge grouper and mutton snapper and
26 yellowtail snapper and black grouper, take those out, but also
27 add, before the phrase "the MSY proxy", "the MSY or MSY proxy",
28 so that it will fit the parallel construction later in the
29 sentence, where it says "FMSY or F proxy", or maybe it should
30 say "FMSY proxy". Then let's say that for all reef fish
31 species.

32
33 **CHAIRMAN POWERS:** Can you guide Charlotte through what you're --
34 Because I'm not sure exactly what you're taking out of this
35 paragraph.

36
37 **MR. GREGORY:** Take the species out of the last sentence.

38
39 **DR. FROESCHKE:** I think you could just say "reef fish stocks"
40 and get rid of the species. You could get rid of everything up
41 to "or future assessment" and then --

42
43 **MR. GREGORY:** Delete everything except the last sentence.

44
45 **DR. FROESCHKE:** Then I think you say, instead of the black
46 grouper, mutton snapper, yellowtail, you could get rid of all
47 that and just say "for reef fish stocks and red drum", I think.

48

1 **MR. GREGORY:** After the words "the MSY", add "or MSY proxy".
2
3 **CHAIRMAN POWERS:** All right. First off, that is the motion. is
4 there a second? We have a second. Is there discussion?
5
6 **DR. MACLAUHLIN-BUCK:** A quick question. Okay, and so I know
7 that this action is for assessed stocks without the MSY defined.
8 For the other ones, gag and red grouper and red snapper, is that
9 what you use for those? I feel like it should all be
10 consistent, and so, if you already have something on the books
11 for gag, red grouper, and red snapper and all of those in Table
12 1.1.1, that should be consistent.
13
14 **DR. FROESCHKE:** In my mind, I guess the way -- It would allow
15 that, and so, based on what I suggested there for reef fish and
16 red drum, and this may not be the right way to do this, but, if
17 we did do a red snapper assessment later, and they decided that
18 it should be F25, we could do that.
19
20 **DR. MACLAUHLIN-BUCK:** That language now covers all of them, all
21 of these that are in 1.1.1.
22
23 **DR. FROESCHKE:** I don't know if that's what we want to do.
24 Carrie, you're shaking your head no. I mean, you could either
25 do that and say for the stocks applicable by this action or
26 something, but I guess the way I would probably do this, in
27 practice, is I would add this as a separate alternative in
28 Actions 1.2 and 1.3, just the last one that could be selected in
29 addition to the other preferred alternatives, and say, for the
30 stocks applicable in this action, this could be done, something
31 like that.
32
33 **CHAIRMAN POWERS:** Carrie.
34
35 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chairman. Yes, I
36 think that's a good suggestion from John, because I think that
37 wasn't our intent, to go backwards and change all those other
38 stocks that we already have criteria for. The purpose is to set
39 and establish these criteria for stocks that we've already had
40 assessments that we don't have clearly laid out and then for the
41 unassessed stocks, and so the purpose of this was in the future.
42
43 Like, for example, we're getting a yellowtail snapper assessment
44 fairly soon, and that's shared with the South Atlantic Council,
45 and then we can more quickly react with that, and that was the
46 purpose of putting it in this action, and so I think you could
47 do something like what John suggested, but, really, it should
48 say when we get an assessment, because, for many of those

1 stocks, we have no assessments for, when you go to the next
2 action, but, if you want to make the recommendation, we'll give
3 it to the council, and then we'll figure out how to put it in
4 the document.

5
6 **CHAIRMAN POWERS:** Doug.

7
8 **MR. GREGORY:** This is not related to 1.1, but it seems to me
9 that that's important for any species, to not be held to having
10 to do a plan amendment to change the MSY or MFMT or MSST. We
11 would want the same flexibility for all species, and that's what
12 this does there. It doesn't say we're going to change them.

13
14 It just says, in future assessments, we have this mechanism for
15 recommending a change that streamlines the effect, because I
16 thought the conundrum was that we can't do anything unless the
17 council goes through a plan amendment with alternatives and that
18 whole shebang of analyses, which takes two years to do, and
19 we're trying to streamline that, and it seems like we would like
20 to do that for all species, red snapper and red grouper and gag
21 and whatever, and not just these four.

22
23 What Steven pointed out was that it was limited to just these
24 four that we have in Action 1, and so I thought it was a good
25 idea, and I thought we could do it even at the end of this
26 document, or just give staff -- Say we recommend this for every
27 action, but this goes beyond this document, as Carrie points
28 out. It goes to the species that aren't included in this
29 document.

30
31 **CHAIRMAN POWERS:** Will.

32
33 **DR. PATTERSON:** Earlier today, we had some great presentations
34 and robust discussion about stock determination criteria and
35 steepness and those types of things that we traditionally
36 provide as scientific advice to the council. This particular
37 exercise, at the moment, feels like a wordsmithing exercise to
38 craft language that the council can use, which I don't think the
39 SSC really -- That it's our purpose or we're providing much
40 value in that respect.

41
42 If there are specific things that we think that we can inject
43 here as far as scientific advice to the council, I am all for
44 it, but I hope we don't go through this amendment and subsequent
45 amendments and just talk about which words are out of place and
46 how this could be phrased differently.

47
48 **MS. MARA LEVY:** I just wanted to clarify that, even with this

1 language, the council would still be changing the MSY or MSY
2 proxy through a plan amendment, and so, the idea that it's not
3 going to require a plan amendment, don't go there.

4
5 What it potentially won't require is the alternatives analysis,
6 but keep in mind that, to the extent that you have an
7 assessment, either a new assessment for a stock that's already
8 been assessed or an assessment for a stock that's never been
9 assessed, there's going to be more that changes than the MSY
10 proxy, and so presumably there is going to be other things that
11 go along with that, catch level recommendations and things like
12 that, and those will all require actions and alternatives, and
13 so there is nothing wrong with doing this, but I just want to
14 make clear that it's not going to be like the SSC says it and
15 then it's automatically going to happen without the council
16 actually going through some sort of process to put it into
17 place.

18
19 **CHAIRMAN POWERS:** We're getting wound up in the details of those
20 this gets implemented, and, basically, all we're really trying
21 to do is make some comments and recommendations that you ought
22 to build in flexibility where you can, and I am just looking for
23 ways that we can communicate that. I think we tend to all agree
24 with that, but I am looking for ways we can communicate that
25 without getting into all the details of the motion and how it
26 gets implemented into FMPs and so on and so forth. Doug.

27
28 **MR. GREGORY:** Let's just go back to why is that statement in
29 Alternative 3? Why was Alternative 3 developed? We're just
30 trying to expand that to other species, and I'm assuming there
31 was a good reason for Alternative 3 to be developed, and I agree
32 with everything that Mara said, and that's what's in the
33 analysis, that it would allow the council to change the MSY
34 based on a recommendation without going through an alternative
35 analysis that they would do otherwise, Alternative 1, 2, 3, 4,
36 and 5. They would simply take our recommendation, if they agree
37 with it, and put it in the document and analyze that.

38
39 If my motion has no helpful meaning, then I would say that
40 Alternative 3 has no helpful meaning, and so whatever we want to
41 do, and I'm not wedded to it, but it made sense to me. Again,
42 what I have seen in the past is the stock assessment people or
43 the SSC saying, well, we can't consider that proxy, because the
44 council has on the books this proxy, and so this is the only
45 proxy we can do, and this alternative and that wording
46 encourages the analysts, or the SSC, to think outside of that
47 council box, and it's not just 30 percent. If we recommend 35
48 or 25, we've got that flexibility. In the past, we didn't think

1 we had that flexibility, and, again, that's the most important
2 part of this, to me, rather than the streamlining of the plan
3 amendment process.

4
5 **CHAIRMAN POWERS:** Again, I am reminded of what I mentioned this
6 morning about over-specifying scientific information in
7 codification, and this sort of wording basically leaves it open,
8 about how you actually measure FMSY. It could be MSY or a
9 proxy, and the -- I don't know. What is the SSC's -- If we were
10 to vote this up, is this going to cause any huge problem in
11 terms of the process of the FMP development?

12
13 **DR. FROESCHKE:** My two-cents is no, and I feel like I have a
14 good understanding of what you all are wanting, and I think how
15 I would operationalize this, if left to my own devices, is,
16 again, I would just add this as an additional alternative to the
17 Sub-Actions 1.2 and 1.3, which you will see when we get to
18 those, which would essentially allow that to happen.

19
20 The one detail of this I could foresee, based on Doug's comment,
21 that a situation might come about is, as part of the review of
22 this, you provided ABC and OFL recommendations for SPR 30 and 40
23 and 26, for example, like we just did for gray snapper. In that
24 case, we wouldn't just be noting it in a plan amendment. We
25 would have to go through the alternatives, because we need to
26 have three reasonable alternatives, but that would be how I
27 would interpret this motion and incorporate it into the
28 document, and so it doesn't cause me concern.

29
30 **MR. RINDONE:** This is administrative in nature, but if you guys
31 could make sure to say your name when you're talking into the
32 mic, and it will help our transcriber, since we are now
33 transcribing SSC minutes. Thanks.

34
35 **CHAIRMAN POWERS:** Wonderful.

36
37 **DR. MACLAUHLIN-BUCK:** I think that, Doug, what you were saying
38 -- With your motion, this is kind of like what you would
39 recommend to the council as a preferred with the language
40 change, or you're just recommending changing that language?

41
42 I understand talking about don't get wrapped around the language
43 and the motion, and so maybe something that we could do, because
44 this is -- We are not reviewing data and giving scientific
45 expertise on that at this time, because the document isn't at
46 that point, but this is an opportunity for the SSC to be
47 involved in the procedural aspect of what is trying to be put
48 together here and how you would be able to best use your

1 scientific expertise when it's time to make these
2 recommendations, as they get assessed in future assessments.

3
4 Maybe a thing to do is to go through all of the actions first
5 and, instead of maybe picking some motions to recommend as
6 preferreds or some language, just do kind of a set of,
7 procedural-wise, this is what the SSC recommends as the best way
8 for them to be able to provide good scientific expertise and
9 advice, including consistency for all of the species and some
10 flexibility that you don't have to use MSY. Maybe go through it
11 like that and then give the council a big-picture group of
12 recommendations from the SSC.

13
14 **CHAIRMAN POWERS:** Yes. I look at this basically as just a
15 recommendation. From what John has said, you might consider to
16 put this in as an alternative for all the particular analysis,
17 and, again, this is sort of just common sense, and I am
18 interpreting this motion as basically just conveying that, and
19 so have we had enough discussion of this? Do we want to vote on
20 it? I do want to vote on it. **Are there any objections to this**
21 **motion?** We have a couple of people on the webinar, and I think
22 Harry Blanchet is not with us as well as Jason. **Are they**
23 **objecting to this motion?** I will give you all ten seconds to
24 decide. **If not, then the motion carries.**

25
26 **DR. MICKLE:** I didn't feel comfortable commenting while the
27 motion was on the board, as a council rep, but I just want to
28 understand what does this motion do, and does this create a --
29 Should it have been for the SSC to recommend for future stock
30 assessments, or is this the creation of an alternative, or is
31 this an amendment of an alternative? I guess that I'm confused
32 or locked into the council process. Thank you.

33
34 **DR. FROESCHKE:** Paul, the way I would operationalize this, I
35 would say something about, in Sub-Action 1.2, add a new
36 alternative that applies to the stocks in this sub-action and
37 then use that text, and then the same thing for 1.3, red drum,
38 and so that would allow us to modify the MSY proxy for those
39 stocks, essentially by adding a new alternative to the amendment
40 that could be selected in conjunction with the other
41 alternatives in the action.

42
43 **CHAIRMAN POWERS:** Paul.

44
45 **DR. MICKLE:** What is going to occur is an additional alternative
46 is going to be added, and I think that's a good thing, and I
47 think that's what the SSC's role should be at this point in
48 time, is adding or recommending alternatives, whether they be

1 present or feed off of present alternatives in the document,
2 but, again, that's just an opinion.

3
4 **CHAIRMAN POWERS:** Thank you. Shannon.

5
6 **DR. CALAY:** Thanks. I just wanted to be certain that there is
7 still some time to go over -- There is some language in these
8 alternatives that could be corrected that has no bearing on its
9 interpretation. Will the Science Center have an opportunity to
10 pass you some recommendations for language still?

11
12 **DR. FROESCHKE:** Yes, and you're certainly encouraged to do that,
13 and, two, you do have Science Center staff on the IPT, and so it
14 would be great, and they would be welcome, and, this one, the
15 development of this, has been very tight, and people have been
16 traveling, and so, yes, we want you to provide input on this,
17 and we want to get something that everyone is satisfied with.

18
19 **CHAIRMAN POWERS:** Thank you. Going back to the action items,
20 the alternatives, you're basically left there with Alternative 2
21 and 3, which taking out the flexibility aspect, are the same.
22 My question then is do we -- This is saying, basically, that the
23 existing criteria that we use now via the assessments is 30
24 percent, and do we have any interest in changing that or adding
25 another alternative that gives another value? Doug.

26
27 **MR. GREGORY:** Not at this point. I mean, I think that would be
28 outside of what we're being asked to do. We're just being asked
29 to get these in place that have already been recommended to the
30 council by the SSC.

31
32 **CHAIRMAN POWERS:** Okay. I just wanted to give people the
33 opportunity. All right. Do we move on to the next item?

34
35 **DR. FROESCHKE:** Moving on to the next item, Sub-Action 1.2, MSY
36 proxies for the stock complexes, and so, in this one, there's a
37 lot of alternatives, and what I would like to do is take these
38 in small chunks. In general, this includes stocks and stock
39 complexes, complexes being those groups of stocks managed as a
40 unit that we discussed earlier, and these are what we would call
41 data-poor or species without an assessment, with the exception
42 of two that we will get to here briefly.

43
44 Essentially, Alternative 1 would be the no action, just like
45 Alternative 1 in Action 1.1, which says that you wouldn't define
46 an MSY proxy, and the consequence is that you wouldn't be
47 consistent with the requirements of Magnuson, and so this is
48 what I would call a non-viable alternative.

1
2 Alternative 2 and 3, I will kind of talk generally about their
3 structure. These, again, are two complexes, and Alternative 2
4 would address only the shallow-water grouper complex, and that
5 includes four stocks of black grouper, scamp, yellowmouth, and
6 yellowfin grouper.

7
8 If you recall from two minutes ago, black grouper and yellowedge
9 grouper are assessed species, and these are the only two stocks
10 in this that have assessments, and so the way that Alternative
11 2, for example, works is there are four options, and the same
12 with Alternative 3, and, essentially, the options are -- Option
13 a for Alternative 2 is use black grouper as an indicator, and
14 so, in the first action, if you were to set FSPR 30 as the MSY
15 proxy, that MSY proxy would then apply to the group as a whole,
16 and that would include scamp, yellowmouth grouper, and yellowfin
17 grouper.

18
19 The way that this work is, if at some point, for example, the
20 MSY proxy for black grouper would change to 35 or 25 or 40, then
21 the MSY proxy for this group would also change in concert, and
22 so that's Option a.

23
24 Option b would set the MSY proxy for this group to 20 percent
25 SPR, and Option c would set it to 30, but not just black grouper
26 as an indicator, and so what that means is that, if, for some
27 reason, black grouper changed the MSY proxy, it wouldn't
28 necessarily apply to this group as a default, if there was some
29 reason to do that, and then Option d is SPR 40, and so that's
30 generally, based on the papers and the presentations that we've
31 heard here today, the reasons for -- These alternatives range in
32 SPR proxies from 20 percent to 40 percent, with 10 percent
33 increments. We really haven't tried to go more fine-scale than
34 that. Then, for Alternative 3, it's exactly -- Yes, sir.

35
36 **DR. NANCE:** For just Option b, 20 percent, does that change
37 black grouper to that? The way that reads is the whole thing
38 changes to that.

39
40 **DR. FROESCHKE:** Yes, that's a complicating factor. The other
41 complicating factor is, again, the joint management of the
42 stock, and I guess I would say no, but I don't know, and the
43 other thing to think about is the way that that would be -- It's
44 managed as a complex, and so I don't believe that it would
45 change actually the OFL and ABC specifications, but that is
46 something that we need to think about.

47
48 **CHAIRMAN POWERS:** This is something that, in general with stock

1 complexes, that I'm not sure about, and that is that,
2 essentially, the way you would operationally determine the SPR
3 is looking at the life history and so on, and, in this case, in
4 the one on the screen here, that would be for black grouper,
5 presumably, and so you're kind of assuming that all the other
6 species are about the same.

7
8 Even if they have really similar life histories, applying the
9 same fishing mortality rate to all of the stocks, you are sort
10 of neglecting the uncertainty associated with it, and I guess
11 what I'm saying is that picking F30 percent for each one of
12 those, when you're only actually being able to measure for one
13 of those, that one might want to be more precautionary in
14 providing the F for the aggregate, and that's something to think
15 about. Shannon.

16
17 **DR. CALAY:** I think an additional complication with this
18 particular alternative is that the black grouper assessment most
19 recently was essentially halted in its tracks because of data
20 insufficiencies, and those data insufficiencies applied to the
21 previous assessment as well, and so I'm not certain we would
22 argue that we have an assessment of black grouper at this time.
23 I think, basically, it's an unassessed stock now.

24
25 **CHAIRMAN POWERS:** So this is one of the known to unknowns?

26
27 **DR. CALAY:** Yes.

28
29 **CHAIRMAN POWERS:** Okay. Luiz.

30
31 **DR. BARBIERI:** I just wanted to confirm what Shannon just said,
32 and that is correct, and that is one of those known to unknown,
33 and there is no prospect in the near future that we'll be able
34 to accomplish a quantitative model-based stock assessment for
35 black grouper, unless we have a significant improvement in data
36 collection.

37
38 **CHAIRMAN POWERS:** Doug.

39
40 **MR. GREGORY:** Well, more importantly, black grouper mature at
41 thirty-two inches and yellowmouth at eighteen inches and scamp
42 at thirteen to fifteen inches. To try to manage a complex with
43 just one indicator species I think is just not going to work,
44 unless they're all similar, other than just being groupers, and
45 that's similar in their life history.

46
47 We've already got black grouper on the books, and I think, Joe,
48 we're in the situation, and the reason for this amendment, is we

1 have to specify something for these species, and we don't have a
2 stock assessment, and so an F of 30 percent is simply a
3 placeholder until we get an assessment, and we know now that we
4 have the flexibility to recommend whatever is appropriate when
5 we get an assessment, if there is something more appropriate,
6 and so I wouldn't get hung up on whether F 30 percent is
7 appropriate for everything, because it's just a placeholder so
8 we can get it on the books, and it's a technicality and not an
9 actual recommendation to manage that fish that particular way,
10 because we don't have an assessment.

11

12 **CHAIRMAN POWERS:** Okay. Thank you. Point taken. Kari.

13

14 **DR. MACLAUHLIN-BUCK:** Another question, and I'm just trying to
15 clarify some of this. Maybe not black grouper, and maybe let's
16 go to the deepwater and the yellowedge grouper, which is
17 assessed, and so, with Option a, what that would mean is not
18 just that you are using the yellowedge grouper's MSY proxy for
19 these others, but that, if at some point yellowedge grouper --
20 If the status changes, the overfishing or overfished, all of the
21 other species, their status also changes? That is Option a
22 under these? Okay.

23

24 Then the Option b, c, and d are just that you would use the
25 different SPRs. Okay. Because I think, at first, I was
26 thinking that your indicator species is just that, because it's
27 managed together or a similar type of species, that you would
28 just use that MSY proxy for the rest of them, but it would
29 actually change their status if the indicator status changed.
30 Got it.

31

32 **DR. FROESCHKE:** On the groups, there is a document that
33 describes a little bit more about how they were done, and so --
34 Nick Farmer and colleagues at the Regional Office, and I can't
35 remember who else contributed, but it includes a lot of life
36 history for the various groups, and that's how these stock
37 complexes were designed. As far as -- This would just be the
38 MSY proxy for a complex, and it wouldn't mean that they all need
39 to have the same size limit or bag limit or anything like that,
40 and so just to be clear.

41

42 **CHAIRMAN POWERS:** Steven.

43

44 **MR. ATRAN:** A couple of things, and one is kind of minor, and
45 it's just a wording, but all of these alternatives should say
46 the MSY proxy for grouper is the yield at FSPR. You have that
47 in the discussion, but that wording should also be in the
48 alternatives.

1
2 The other thing that I'm going to get into here is, if you don't
3 have a stock assessment, the National Standard 1 Guidelines
4 state that the status determination criteria should be
5 measurable and objective, and, as far as being measurable, if
6 you don't have a stock assessment, you have no estimate of F,
7 and you have no estimate of yield at F, and so you're not
8 abiding by the guidelines in the case, and I would give serious
9 consideration to coming up with some sort of a proxy that does
10 not depend upon fishing mortality rate, if you do that. I was
11 going to bring this up later on, when we talk about optimum
12 yield, but it really fits into here as well.

13
14 **CHAIRMAN POWERS:** Thank you, but, again, that's something that
15 might be dealt with after these alternatives. In other words,
16 you have -- I look at these alternatives as kind of a general
17 framework for approaching the problem, and then there are some
18 specific things when you get down into the weeds that, in the
19 scientific world, we would have to deal with.

20
21 All right. I am looking for a couple of things here. One, do
22 we want to have some broader alternatives associated with this
23 to think about? If we do, we may not necessarily have to put
24 those in terms of a motion, but rather some advice to John about
25 how to approach presenting those alternatives, and that's one
26 thing that we can deal with. Then, secondly, do we want to
27 recommend one of these alternatives right now? Do we have any
28 basis for doing that? I would open the floor. Doug.

29
30 **MR. GREGORY:** In general, I would recommend Option c for all of
31 these and not have indicator species and just put F 30 percent
32 as a placeholder. My understanding is this is a simple version
33 of what's been looked at in the past, and catch levels were
34 evaluated in the past, and I think the Center said that we
35 couldn't do that, and so a lot of work has been done on this and
36 has been shot down, for one reason or the other, and we're doing
37 this because it's a legal requirement to have something on
38 paper, and so this document has definitely been wrapped around
39 the axle a few times, and so, as long as legal counsel is okay
40 with what we're doing, let's just move forward, as long as we're
41 not doing something that is obviously dangerous or non-sensical,
42 in our minds.

43
44 **CHAIRMAN POWERS:** First Jim and then Bob.

45
46 **DR. NANCE:** This is maybe a procedural question, but, in the
47 past, when you pick an alternative, the rest are gone, and so,
48 if you pick Alternative 2, does that mean that you don't

1 establish anything for everything else?
2
3 **DR. FROESCHKE:** I think it says so in the discussion, but this
4 is one, and I should have mentioned it, where you could select
5 multiple alternatives, and, really, what we struggled with in
6 the development of this action is how to make it clear what
7 choices is the council actually selecting, and so, in this case,
8 they would essentially be selecting multiple preferred
9 alternatives, and their choice would be really the options, and
10 so, for each alternative, you would need to select one option,
11 and so you can select all the action alternatives, 2 through 9,
12 as preferred, and you can select one option within each of them.
13
14 **DR. NANCE:** So, in this case, all the alternatives are always
15 going to be selected, and you're just selecting an option under
16 each alternative, and so should they be renamed then? I would -
17 - Maybe I am -- That's just a question.
18
19 **DR. LORENZEN:** I was confused by the same thing, and I was
20 wondering if maybe they should all be sub-options or something.
21
22 **DR. FROESCHKE:** Earlier, we had them in a big table, but then it
23 wasn't clear what choice the council was actually being asked to
24 select, and so I kind of ran through all of that, and so, if you
25 all have a feeling on how it could be better, it makes no
26 difference to me.
27
28 **CHAIRMAN POWERS:** All right. Bob, you had a --
29
30 **MR. GILL:** Thank you, Mr. Chairman. My question is
31 clarification of the indicator species or not, and Option a
32 includes an indicator species, and Option c takes it out, and
33 so, Option b and d, is there an indicator species or no?
34
35 **DR. FROESCHKE:** No, and the reason that the parentheses is in
36 Option c is to make it clear what the difference was between
37 Option a and Option c, because we even confused ourselves at
38 various points.
39
40 **MR. GILL:** Thank you.
41
42 **CHAIRMAN POWERS:** Given that, I am of the school of thought with
43 Doug and just say F30 percent SPR and see how it plays out as
44 information becomes available. Do we want to put that in a
45 motion? Again, I will assign this motion to Doug, that, in
46 general, Option c for these alternatives is a good way to move
47 forward.
48

1 **MR. GREGORY:** Well, not Option c, because I noticed that, later
2 on, where there is not discussion of any indicator species,
3 Option b is at 30 percent, and so I would just say, for
4 Alternatives 2 through 9, the SSC recommends an MSY proxy of F
5 at 30 percent SPR for the species under consideration.
6
7 Now, John from Alabama just suggested that Alternative 9 is
8 goliath grouper, and so it has a different range, and I think,
9 currently, it's 50 percent, but why is it listed here then, if
10 we already have it?
11
12 **DR. FROESCHKE:** John, that's the SDC definition of the South
13 Atlantic Council and not the Gulf Council.
14
15 **MR. MARESKA:** The 50?
16
17 **DR. FROESCHKE:** Yes. They have 40 percent.
18
19 **MR. GREGORY:** Then I would make my motion for Alternatives 2
20 through 8, an FMSY proxy of 30 percent, and, for Alternative 9,
21 an FMSY proxy of F40 percent, to match the South Atlantic
22 Council. Thank you.
23
24 **CHAIRMAN POWERS:** Okay. Is there a second to this?
25
26 **SSC MEMBER:** Second.
27
28 **CHAIRMAN POWERS:** All right. Do we want further discussion,
29 clarification or discussion?
30
31 **DR. MACLAUHLIN-BUCK:** Okay, and so this is what you would
32 recommend to the council to be their preferred options in this?
33
34 **MR. GREGORY:** Yes.
35
36 **DR. MACLAUHLIN-BUCK:** That is what the council is looking for
37 from the SSC?
38
39 **DR. MICKLE:** I am not going to speak for the whole council, but,
40 essentially, in the past, yes, recommendations for preferred are
41 given, and given vast respect, from the SSC for consideration.
42
43 **CHAIRMAN POWERS:** Thank you. Mara.
44
45 **MS. LEVY:** Thank you. I appreciate the motion. I just did want
46 to point out that the National Standard 1 Guidelines, when they
47 talk about complexes, say that, where practicable, stock
48 complexes should include one or more indicator stocks, and so

1 they don't have to, but it would be nice, given this motion, if
2 you maybe had some explanation about why you don't think an
3 indicator stock for the ones that have assessed species in them
4 is appropriate. It would just help with background.

5
6 I also heard some discussion about black grouper, and we have an
7 assessment that had been accepted in the past, but there is
8 information now that, really, that's not a good assessment, or
9 we don't think it's good anymore, and that might be helpful too,
10 because it's included in the first action as an assessed stock,
11 and we're incorporating that into the FMP, and it might be
12 helpful if there was more information presented to the council
13 about what the issue with black grouper is. Thanks.

14
15 **CHAIRMAN POWERS:** This motion actually doesn't say anything
16 about indicator species. All it's saying is, for those species,
17 this is the preferred alternative, in terms of FSPR, the motion
18 itself.

19
20 **MS. LEVY:** Well, I think that's my point. For two of the
21 complexes, and these complexes are already managed as complexes,
22 because we have complex overfishing limits, and we have complex
23 annual catch limits, and so it's not like they're not already
24 managed like that, and so, for those two particular complexes
25 that have assessed species in them, the idea would generally be
26 that you take the species that is assessed and you use that to
27 establish potentially the status determination criteria for the
28 complex.

29
30 The guidelines seem to have a preference for having at least one
31 indicator stock for a complex, if practicable, and so all I'm
32 saying is, if you're going to pass this motion and you're going
33 to recommend to the council that they don't use the indicator
34 stock, it would be helpful to have some explanation about why
35 you don't think that's appropriate.

36
37 **CHAIRMAN POWERS:** Again, this motion itself isn't addressing
38 that issue, and so let's deal with this motion first, and then,
39 if there's other discussions relative to indicator species, then
40 we'll deal with that. First, this motion. Are there any other
41 discussions? **If not, are there any objections to this motion,**
42 **including the people on the webinar? The motion carries.**

43
44 Going back to Mara's comments, do we have any advice about
45 indicator species?

46
47 **DR. FROESCHKE:** I don't have any advice, but I do have a
48 question. Is it the Science Center's perspective that black

1 grouper is now -- That the stock status is unknown? Carrie, I
2 don't think we've been notating it that way in the amendment,
3 and I guess the follow-up is, is there a process in which, once
4 it goes to an assessment, and that assessment is rejected, is
5 there some way that actually transforms from known to unknown?
6

7 **DR. CALAY:** I can't answer the second part of the question, but
8 the assessment that we most recently did, I think, was in 2010,
9 and it relied on an assumption of how you specify black versus
10 gag grouper in the commercial landings. That is the assumption
11 that was no longer supported when the state assessment was made,
12 and so I think you can say that the Science Center believes that
13 that black grouper assessment is no longer supported. I don't
14 know what the process will be for reestablishing an assessment
15 of that stock.

16
17 **CHAIRMAN POWERS:** Luiz.

18
19 **DR. BARBIERI:** To that point, Mr. Chairman, this was discussed
20 with the SEDAR Steering Committee, and, to some extent, it was
21 already discussed by the South Atlantic Council's SSC, and I
22 thought we had discussed this here as well, but I may not be
23 remembering correctly, but, anyway, the issue was that, yes,
24 there was an assessment that was somewhat stale and needed to be
25 redone as a benchmark assessment.

26
27 It was going through the SEDAR process, and the data workshop
28 was scheduled, and, during the data workshop, we realized that
29 there were several issues with the data that were really too
30 complicated and not resolvable and would not allow the
31 assessment to continue moving forward. At the end of the data
32 workshop, the assessment was aborted, basically, and we
33 communicated this to the SEDAR Steering Committee and the
34 Science Center and just left it at that.

35
36 Now, it's a matter of revisiting -- I think the Steering
37 Committee would make a recommendation to revisit this species as
38 a potential assessment if and when those data issues are to be
39 resolved, but we don't see, anytime in the near future, any easy
40 resolution to come out of this, and so, right now, it's
41 basically unknown stock status and not on the schedule, the
42 SEDAR schedule, for continuation.

43
44 **CHAIRMAN POWERS:** Thank you. I think, in terms of the actions
45 we're dealing with here -- What we're really hearing is perhaps
46 black grouper is not the indicator species that we thought about
47 and that we ought to make recommendations accordingly. Mara,
48 did you have a quick comment?

1
2 **MS. LEVY:** Thanks. Just to John's question, and so I wouldn't -
3 - Stock status is what NMFS says the stock status is, and so,
4 until that is changed, it is what it's listed as. Whether it's
5 appropriate to be an indicator species, based on issues with the
6 assessment, that's, I think, a different question, but, to
7 answer John's question, I wouldn't change the way you are
8 characterizing the stock status until NMFS actually changes the
9 stock status.

10
11 **CHAIRMAN POWERS:** Thank you. John.

12
13 **MR. MARESKA:** In regard to yellowedge grouper, that was a 2011
14 assessment, and I think that stock assessment is what started
15 the controversy about best scientific information available, and
16 so I think we found that one to be the best scientific
17 information, but unsuitable for management, and is that correct?
18 Is that everyone's recollection of that assessment? So I don't
19 see how that would be -- If that's the case, I don't see how it
20 would be useful as an indicator species.

21
22 **DR. CALAY:** That's not my recollection, although, frankly, I
23 could be wrong. There were two assessments made at the same
24 SEDAR, and it was yellowedge grouper and the blueline tilefish,
25 and blueline tilefish we definitely felt was unsuitable for
26 management, although it had been assessed.

27
28 Yellowedge, my recollection was that it led to management
29 advice, but, again, that was 2011, and I could be mistaken. It
30 is an assessable stock, and it could be put back on the
31 schedule. The data for that assessment are actually reasonable,
32 and it is an assessed methodology, and so that certainly is an
33 assessable stock.

34
35 Any concerns we might have had about it at that time, it's not
36 clear to me whether -- That was of our very first SS
37 assessments, and we've learned a lot since then, both about how
38 to present information and how to use SS, and so I think it's
39 fair to say that, of the deepwater groupers, that is the most
40 assessable of the species on the list.

41
42 **CHAIRMAN POWERS:** Jim.

43
44 **DR. TOLAN:** I thought that was triggerfish that led to that not
45 suitable for management advice, but, sitting on the scamp data
46 workshop right now, I think all of these are going to suffer
47 from the same ID problems coming in from the recreational catch
48 data, and so I don't know that one of these is going to make a

1 better indicator than any of the others.

2
3 **CHAIRMAN POWERS:** Kari.

4
5 **DR. MACLAUHLIN-BUCK:** My thoughts on the indicator species, and
6 not using it like choosing some species, if it's in these are in
7 a future decision, for a complex, as far as not having the
8 information for an unassessed stock for an MSY proxy and already
9 have it established, what species you're going to use, and
10 everybody is agreed that that is appropriate, with the motion
11 that's there.

12
13 However, as far as using an indicator species for a complex,
14 with these or in the future, I have concerns about this as if
15 the stock status changes for that species, then everything else
16 in the complex is also affected in the regulatory -- I think
17 there's some social and economic implications, and, with this
18 group, without some kind of change to a species and how it's
19 managed and the stock status, without your review, I feel like
20 it should be a concern.

21
22 Also, as far as people changing species, you never really know
23 what's going to become popular. Scamp is incredibly popular in
24 the South Atlantic, and that's kind of a new thing, and so there
25 could also become a fish that becomes more popular and targeted,
26 and, over time, there is a problem with that one, and it hasn't
27 been assessed, and your indicator species is saying it's fine.

28
29 I feel like using it and saying that, when that status changes,
30 all the other complex changes as well, I am just -- I feel like
31 that is not something that the council could consider, and I
32 feel like that's not a good way to manage them. Using their MSY
33 proxy for all the species in the complex I think makes total
34 sense, and that's the best information that you have available.
35 I don't know.

36
37 Does anybody else agree with me? Taking black grouper out, that
38 would only leave yellowedge as the indicator for a deepwater
39 grouper complex. If something indicated that there was a
40 problem with yellowedge, and the status was changed by NOAA
41 Fisheries, and that meant that other species in that complex
42 also were now subject to those regulatory requirements for
43 overfishing or overfished without your review, the SSC's review,
44 and I think that's my problem, is that it would automatically,
45 possibly automatically, have a status change without you guys
46 really reviewing it and seeing if that is warranted for that
47 species.

1 **CHAIRMAN POWERS:** Thank you. Let me interject here. Our
2 collective memory has been jogged, and this is from a previous
3 meeting, but the SSC moves to accept the SEDAR 22 yellowedge
4 stock assessment report as the best available scientific
5 information. Further, the SSC concludes that the report
6 provides sufficient guidance to make management recommendations,
7 and the motion passed unanimously, and so we're really not
8 arguing then about the yellowedge as a potential indicator
9 species, unless you have some other argument for not, and so,
10 going back to Kari's comment, there is some question about using
11 indicator species and assuming the results of that species
12 translates to the results of all the other species, if you
13 happen to be overfishing, for example. Then the question, to my
14 mind though, is, well, yes, you could go wrong that way, but
15 then what's the alternative? Shannon.

16
17 **DR. CALAY:** In similar conversations with the Caribbean Council,
18 we have encouraged them to establish stock complexes and
19 encouraged them to find an assessible indicator stock, and the
20 reality is we simply don't have the manpower at the Science
21 Center to assess every stock in our FMPs, and so, if you want to
22 have advice about managing these stocks, we think that the
23 option with the most potential right now is to carefully put
24 together stock complexes that represent similar life histories
25 and similar fisheries with an assessible member. We think
26 that's the best way that we can provide you with management
27 advice about unassessible members of these complexes.

28
29 **CHAIRMAN POWERS:** Thank you. I think Doug first and then Kari.

30
31 **MR. GREGORY:** Thank you. The concern I have is the different
32 life histories, I guess, of the species, in the sense that black
33 grouper matures at thirty-two inches, and scamp and yellowmouth
34 at less than eighteen inches, and, if black grouper is an
35 indicator species, more than likely, it would be classified as
36 overfished when the other two are not, and so it has an undue
37 influence on the management of the other species, and, with
38 yellowedge, it matures at about twenty-two inches, according to
39 Assessment 22, but warsaw grouper don't mature until they are
40 eighty inches.

41
42 In that case, you would have the opposite effect, where you
43 might say everything is healthy, because yellowedge is healthy,
44 but warsaw is overfished, and I understand what Shannon is
45 saying, and my question to the NMFS people is, if we have a
46 complex, and we have an indicator species, and that indicator
47 species is not considered overfished, in your famous database
48 listing, does that mean all the other species are also listed as

1 not overfished, which makes management look good? I mean, is
2 that part of this, also?

3
4 **DR. METHOT:** My understanding is that it would not be for the
5 individual species. It would just be for the complex, and so
6 it's a question of whether or not the FMP has as a management
7 unit the complex or if the FMP has as the management unit the
8 individual species of the complex.

9
10 My understanding is that the intention would have been to
11 establish the management unit as a complex and then to have an
12 indicator species within that complex that would be -- Once you
13 got a status for that indicator species, the whole complex would
14 inherit that status.

15
16 **CHAIRMAN POWERS:** Thank you. What are the wishes of the SSC, in
17 terms of further advice to guide is in terms of alternatives?
18 As we indicated, the yellowedge grouper, there is no basis that
19 I see, in terms of the assessment, to not allow them to be a
20 potential indicator species.

21
22 However, for black grouper, there is, but then you get tied up
23 into the official determination of whether a stock is known
24 versus unknown, but, nevertheless, what information we have now
25 is that black grouper is less well known than we previously
26 thought, and so do we want to make some -- What we're basically
27 saying is this alternative, Alternative 2, for that complex,
28 that black grouper may not be a good indicator species, and, if
29 that's not the case, then is there an indicator species for this
30 complex? The implication there is you have to go back and look
31 at the complex itself, as to how you group those, and that's
32 sort of where this discussion is leading. Paul.

33
34 **DR. MICKLE:** Just a question, or two questions, actually, very
35 quickly. I think, in this document, possibly indicator species
36 are defined as those that have had approved stock assessments,
37 and so it would qualify, black grouper, because, at one point,
38 it did have an approved stock assessment, and that's logistical.

39
40 My other question is defining what an indicator species is, what
41 does the SSC want to identify as the basis of what that actually
42 means, whether it's biologically comparable, and so the species
43 within the complex is the best one, the best candidate, or are
44 you just basing it on the one that has the best data, and those
45 are two very different things, in my opinion, if you want to
46 comment on them.

47
48 **CHAIRMAN POWERS:** In many cases, it's ones that have any data.

1
2 **DR. ROPICKI:** One thing I was noticing was, if you look at it
3 from the economics, at least from the commercial side,
4 yellowedge grouper makes sense. I mean, it's in that complex,
5 and it's by far the most important species, but black grouper is
6 kind of the tail wagging the dog. It's about a fourth of the
7 catch of the scamp, in terms of since IFQ management.

8
9 I mean, if we're going to run into a problem with having this
10 indicator species impact the other species in the complex, it
11 seems like that could be a problem, where you're doing it on a
12 very relatively unimportant species economically.

13
14 **CHAIRMAN POWERS:** Thank you. I think what we're really heading
15 to is that we think that the council may want to consider other
16 alternatives, in terms of the shallow-water grouper complex and
17 how to approach the status determination criteria, and largely
18 because there is less confidence in the black grouper itself,
19 and, obviously, we're not going to sit here and say, well, a
20 better complex is, at this point in time, but that may be what
21 we're leading to though, is to review, for the shallow-water
22 grouper complex, other sorts of alternatives for dealing with
23 it. Luiz.

24
25 **DR. BARBIERI:** I agree completely, and, as painful as this may
26 sound, to some extent, I think we have to go back, and it's been
27 a while since we discussed all of this for the complexes in
28 detail and looked at all the criteria and had all of that laid
29 out in front of us, and so I think that we, today, have
30 identified some curve balls here, some issues that were somewhat
31 unexpected, in terms of the black grouper situation that is a
32 recent change, in terms of assessment available and the ability
33 of that species to serve as an indicator and reshuffling that
34 deck there, and the other species that are left over will
35 require us looking at the whole thing, probably, again at some
36 point.

37
38 **CHAIRMAN POWERS:** Essentially, what we're suggesting is that
39 some other alternatives be explored, and I was just discussing
40 this with John, that I think that our discussion itself is
41 enough of a recommendation for the council staff to go ahead and
42 start looking at different sorts of alternatives, correct?

43
44 **DR. FROESCHKE:** Yes and no. I guess, in terms of other options,
45 there's two ways you could look at that. The straightforward is
46 are there different SPR proxies you would want to consider, and
47 I don't think that's what you're talking about. It's is there
48 another way the shallow-water grouper complex could and should

1 be configured, and, if that's what you're talking about, I think
2 that we would have to think carefully about that, because the
3 way the management of these, including the ACLs and everything
4 else, is set up in this way, and so I'm not sure if that would
5 matter or how we would come about developing new complexes sort
6 of within this framework, and it seems like that might be
7 something different.

8
9 I guess the other thing you could do is just get rid of the
10 complexes altogether, and, just for those four -- Well, if you
11 did black grouper in 1.1, for scamp, yellowmouth, and yellowfin
12 grouper, if you just added them as individual alternatives and
13 specified SPR proxies for those.

14
15 **CHAIRMAN POWERS:** Well, first off, we weren't talking the first
16 aspect of it. That's not what we were talking about. Secondly,
17 I think what you're suggesting is a way to deal with it over the
18 short term, and that, if you can't redefine the complexes, and
19 the complex exists as management units already, then what you're
20 suggesting is just specifying F30 percent or an FSPR for
21 individual species, but, again, to me, that's sort of another
22 alternative that should be explored, and I don't think we're at
23 the position to say yea or nay to either of those.

24
25 **DR. FROESCHKE:** Okay. Well, I do understand what you're asking
26 for now, and so thank you for the clarification.

27
28 **CHAIRMAN POWERS:** Ryan.

29
30 **MR. RINDONE:** Just with respect to thinking about the shallow-
31 water grouper complex, there is a research track assessment for
32 scamp that's been started that is also going to consider
33 yellowmouth grouper, for the same reasons that, during gag
34 assessments, we talk about black grouper, because of the
35 identification issues with previous landings data, and so that
36 assessment will, obviously, take some time to complete.

37
38 It's our first research track, and there will be an operational
39 assessment that follows it with management advice, but, when
40 considering how to think about the shallow-water grouper
41 complex, it may be worth waiting to see how the scamp assessment
42 pans out, especially given what Andrew said about scamp landings
43 versus black grouper landings. That's very true.

44
45 **CHAIRMAN POWERS:** Then all of our problems are solved, but, yes,
46 that's exactly how one would hope that the science sort of
47 evolves on this. Any more comments on these? Hopefully no.
48 Then let's move on.

1
2 **DR. FROESCHKE:** We'll go to Action 1.3. Sub-Action 1.3
3 hopefully is more straightforward. It's a single stock, and it
4 would address the MSY proxy for red drum, and this is the only
5 stock in this FMP. As you all know, the ABC and OFL for this
6 are zero in federal waters, and so there is no allowable
7 landings of this in federal waters, although it's heavily
8 targeted inshore.

9
10 The way that the alternatives sort of reflect this difference
11 from the other one is, in Alternative 1, we would not define the
12 MSY proxy, and this falls into the non-viable alternatives
13 realm. Alternative 2 is a little bit different from what you
14 have seen before. Again, there is no federal landings for this
15 species, but it is managed, or it is harvested, in state waters
16 extensively, and the way that the management objective is --
17 It's based on an escapement rate of juvenile fish equivalent to
18 30 percent of the spawning stock biomass, and so we call that a
19 30 percent escapement rate.

20
21 Each of the states measure that. Perhaps they measure it a bit
22 differently, but Alternative 2 would continue to use the
23 escapement rate as the MSY proxy. Alternative 3 would
24 essentially adopt what we've done before, is set the MSY proxy
25 to F30 percent, similar to what we did in Actions 1.2 and 1.1.

26
27 **CHAIRMAN POWERS:** This is an example of odd selectivities,
28 basically. I mean, it's not too much different than the shrimp.
29 All of the fishing is in the juvenile stages, and, to me, they
30 are pretty much -- Alternative 2 and Alternative 3 are
31 equivalent, but it's just you are calling them different names,
32 and you're saying all the fishing should occur in the juvenile
33 stages, but you want to still maintain the F levels of those
34 juvenile stages, so that it reaches 30 percent SPR.

35
36 To me, I don't really see the difference between the two, other
37 than recognizing that the Alternative 2 is being more explicit
38 about how the present management is, in terms of escapement, but
39 that's my opinion. Ryan.

40
41 **MR. RINDONE:** I may be touching on what Dr. Tolan is fixing to
42 say, but it is important to know that each of the five Gulf
43 states calculates escapement differently, and we had discussed
44 this at a previous red drum working group, amongst some select
45 SSC members who had volunteered/volun-told for that group, and
46 that was confirmed there.

47
48 Also, not all of the states determine their escapement rates on

1 an annual basis. Some of them look at it intermittently every
2 three years or every five years or some other time period, and
3 the harvest controls for red drum in state waters are also not
4 identical state-to-state. Some states allow for harvest of
5 over-slot individuals, which would be considered sexually-mature
6 adults, and so the Gulf-wide inshore fishery does not focus
7 exclusively on juveniles. There is some adult harvest.

8
9 **DR. TOLAN:** You touched on exactly what I was going to bring up,
10 because it's not done uniformly, and I was just going to ask if
11 there is any guidance that's going to be put forward on how that
12 30 percent should be calculated among the states, because they
13 are very different, but, because it's tied to a very specific
14 number now, that spawning stock biomass, that 30 percent of that
15 number is a very specific number, and so is there going to be
16 any guidance on how that should be calculated?

17
18 **DR. FROESCHKE:** We have not had those discussions, and I guess
19 our intent was to complement what is being done without
20 complicating it, and so, if you feel that the language doesn't
21 accomplish that, it would be helpful if we could revise the
22 language to that effect.

23
24 **DR. TOLAN:** To that, it just seems to be that it's tied to a
25 very specific reference point term now, and so, if you want to
26 substitute something else in there, just say 30 percent
27 escapement, or whatever the states are calculating, and that
28 would be a little bit better, and I just think it's very
29 specific the way it's written now. John.

30
31 **MR. MARESKA:** I guess I'm just trying to consider the logistics
32 of each state standardizing their escapement calculations versus
33 doing a Gulf-wide assessment. Is red drum even on the SEDAR
34 schedule?

35
36 **MR. RINDONE:** We do have it on the schedule in the more distant
37 future, and I think it's 2022, and I would have to pull it up.
38 We're going to talk about that more tomorrow though, as far as
39 recommendations for stock assessments in future years. The
40 feasibility of a Gulf-wide red drum assessment though hinges
41 very heavily on the completion of studies that are presently
42 underway using purse seines and other gears to try to sample the
43 offshore adult spawning stocks, and the results of those
44 studies, which have been going on for a few years now,
45 especially in the northern Gulf, will be critical to whether or
46 not an assessment will be possible.

47
48 **CHAIRMAN POWERS:** John.

1
2 **DR. FROESCHKE:** I guess just a follow-up, Jim, to your question.
3 I am just looking at the language on Alternative 2, and I guess
4 it seems fairly concise to me, that last equivalent to 30
5 percent of those that would have escaped had there been no
6 inshore fishery. I am not sure what I would do to -- I mean, I
7 guess it implies that there is some known spawning stock
8 biomass, but I guess, in order to measure the escapement under
9 any scenario, you would need to make some assumption about that,
10 and I was assuming that you guys are already doing that, and is
11 that incorrect?

12
13 **DR. TOLAN:** I know, for the way we do it in Texas, we take our
14 fall gillnet catch rates and compare them to the spring gillnet
15 catch rates, and the difference between those two is a measure of
16 the recreational sector pressure, and we come up with a way to
17 say, well, is the 30 percent making it offshore, based on the
18 differences in the two time periods of the year, and so, again,
19 it's very different among the states, but, when I first read
20 that, I saw that it was tied back to spawning stock biomass and
21 just based on the shoreline, and so the different states are
22 going to have very different numbers, and so how that rolls into
23 a spawning stock biomass for this species Gulf-wide -- I just
24 didn't quite want to get it tied down so closely to that very
25 specific term for this species.

26
27 **CHAIRMAN POWERS:** But, in terms of the overall objectives to
28 having something MSY-like, 30 percent is kind of the standard
29 that we have used to -- It's basically our prior for MSY
30 proxies, and so how it gets implemented by individual states is
31 pretty much up to them, and also the council itself, in terms of
32 if one goes over and one goes under. I mean, that's certainly
33 their prerogative, but, in terms of the overall for the stock
34 itself, 30 percent is as good as we're probably going to get.
35 Harry.

36
37 **MR. BLANCHET:** I just wanted to interject a little bit of
38 history here. In terms of Alternative 2, this really goes back
39 to address the where did this 30 percent escapement rate come
40 from, and remember that this is really related to a 20 percent
41 SPR, because the estimate was that we would need some buffer
42 between harvest on the juveniles and what the spawning stock
43 would be, and so the escapement of 30 percent, back in the day,
44 which was probably the 1990s, was equivalent, at that point, to
45 approximately 20 percent SPR, and so your Alternative 2 and your
46 Alternative 3 have really two functionally different FSPR MSY
47 proxies.

48

1 **CHAIRMAN POWERS:** Thank you. Good point. The point you're also
2 making too, Harry, is that, the decisions that were made at that
3 time, the escapement was trying to address a particular SPR, and
4 it was doing it through escapement, but the two are not
5 equivalent.

6
7 **MR. BLANCHET:** Yes.

8
9 **CHAIRMAN POWERS:** Will and then --

10
11 **DR. PATTERSON:** Now that Harry is on the line commenting on
12 this, we're talking about what's happening in state waters, but
13 then we're trying to infer something about the adult stock
14 offshore. I am just curious, when the original estimates were
15 made about 20 percent, and it seems like there's the potential
16 that the estimate was that most of the surplus production in the
17 stock, or for a given cohort, would be extracted before the fish
18 recruited offshore. Is that true, Harry?

19
20 **MR. BLANCHET:** Yes, and that was just a recognition that there
21 was going to continue to be some harvest on the adult stock, and
22 so the target, at that point, was a 20 percent SPR, and so then
23 the target for the escapement would be a 30 percent escapement,
24 to achieve that 20 percent SPR in the offshore waters, and does
25 that answer your question?

26
27 **DR. PATTERSON:** Yes, in part, but part of the discussion about
28 red drum is whether the adult stock has sufficiently recovered
29 offshore that now there could be the opening of the federal
30 fishery, and that's kind of tied into all of this, but, if the
31 original estimates were that the escapement rates were set such
32 that all of the surplus production for a given cohort would be
33 extracted before they left the estuary, and then there would be
34 no fishing offshore, then it's kind of moot about tying those
35 together.

36
37 **CHAIRMAN POWERS:** Thank you. Steven.

38
39 **MR. ATRAN:** Thank you. I just wanted to let you know that the
40 wording that's in Alternative 2 was taken directly out of the
41 red drum stock assessment, as far as the management objective,
42 and I believe, and I think Ryan might be able to back me up on
43 this, because he's the red drum person, as far as I know, but,
44 originally, it did state that the escapement was to be a 20
45 percent escapement.

46
47 Then, in a later amendment, it was raised to 30 percent, and
48 that's why the language is in terms of spawning stock biomass,

1 rather than SPR, but, again, this comes back to I was trying to
2 come up with something that would give a measurable value to the
3 MSY proxy, and I thought this might be able to do it.

4
5 I realize that each state was measuring escapement differently,
6 but I thought that maybe somebody could figure out how to adjust
7 them and come up with a single Gulf-wide value, but, like I
8 said, that language came directly out of the Red Drum FMP.

9
10 **CHAIRMAN POWERS:** Thank you. I think the way I think about this
11 problem is, from the scientific standpoint, all you're trying to
12 do is to provide an FSPR proxy, and then how it gets implemented
13 raises the issues of escapement or individual states and so on
14 and so forth. From that standpoint, I would just argue for F30
15 percent SPR, recognizing that the actual machinations of how it
16 gets implemented and how it has been implemented has been
17 through state actions and escapements and so on. Do we wish to
18 make -- Yes, Kenneth.

19
20 **DR. ROBERTS:** Joe, I agree with what you said, but I am reading
21 the discussion point here, and it was thirty years ago in
22 Amendment 2 when the states were encouraged to come forth with a
23 process that was more uniform, and here we are, in Alternative
24 2, admitting that it's a laudable thing to measure escapement,
25 but nobody has made much progress on unifying it in the Gulf,
26 and I think that's what -- I don't know if people meet annually,
27 through Gulf States Marine Fisheries Commission, or if you have
28 a working group, but here it is thirty years later and we're
29 stuck on the same thing, looking at the last sentence of
30 Alternative 2, and it's just not good. This is a big fishery.

31
32 **MR. RINDONE:** We had a red drum working group that was an
33 amalgam of some SSC members that have looked at some of this
34 stuff, and Steven's comment was correct also, and so, in
35 Amendment 1, the commercial closure was continued, and the
36 recreational landings were restricted, and the Gulf States were
37 requested to achieve 20 percent escapement of inshore juveniles.

38
39 Amendment 2 prohibited all retention and possession in the EEZ
40 and set the TAC, the total allowable catch, which is what we
41 used at the time, at zero and requested that the states increase
42 escapement to 30 percent, but there was never any mandate that
43 the states use the same method for determining escapement.

44
45 In that thirty-year time period, the states have developed and
46 honed their own methods for determining escapement and have
47 their own reasons for using those methods individually, but,
48 again, we have no mandate for the states to use the same method

1 or any process to achieve that, presently.

2
3 Just as some frame of reference of the impact of the red drum
4 fishery inshore, it's about -- Using old MRIP numbers, it's
5 about twenty-six million pounds per year, in the last couple of
6 years.

7
8 **DR. ROBERTS:** The only way I can respond to that, Ryan, is it
9 says, in the last sentence there, that -- It doesn't have to be
10 identical, and I didn't mean that, but that last sentence says
11 that they need to develop standardized and compatible, and, if
12 we were to pick Alternative 2, we know that's not been done over
13 the last thirty years, but yet we're recommending an
14 alternative, and either you've got to strike the last sentence
15 or do something else with it, but it looks like it's terribly
16 inconsistent with Amendment 2.

17
18 **CHAIRMAN POWERS:** You're talking about Alternative 2 and the
19 paragraph under the discussion?

20
21 **DR. ROBERTS:** Right.

22
23 **CHAIRMAN POWERS:** If this alternative is adopted, NMFS and the
24 states would work to develop standard and compatible methods, et
25 cetera. What is the will of the SSC? Do we want to make
26 recommendations relative to 2 or 3? Again, my viewpoint is
27 that, from the scientific standpoint, all you're really trying
28 to do is to get some measure of the FMSY for the stock as a
29 whole and that all the machinations of individual states and the
30 whole history of this is beyond the scope of what we're dealing
31 with here, and there is an infinite number of ways where they
32 might achieve that 30 percent SPR, and it should be left to
33 them. Luiz.

34
35 **DR. BARBIERI:** Well, I tend to agree with your point there. I
36 mean, this is really something that we're making a
37 recommendation to the council for management of the stock as a
38 whole, including the spawning stock. We should be setting
39 reference points that are meaningful for that portion of the
40 stock.

41
42 The states have found, basically, or have been forced to find a
43 work-around, because they are basically looking into that more
44 inshore estuarine and near-coastal portion of the stock, but, if
45 this is really for management of the species in federal waters,
46 I cannot see why we would depart from MSY or the regular sets of
47 MSY proxies that we have been considering for other stocks.

48

1 **DR. TOLAN:** To that, I would definitely agree with that, with
2 the only caveat being that, in SEDAR 49, when we tried to take
3 on red drum in a data-limited format, it was completely dropped,
4 because you couldn't come up with that kind of number for that
5 species, and so it's very consistent with everything else we've
6 discussed, and so the 30 percent, I think, is a good number to
7 go with, just with that caveat that we tried, and the data
8 needed for that is currently being collected

9 **DR. NANCE:** I agree, because these are just placeholders, and I
10 think, after these studies are done, hopefully there will be
11 some data that can be used to be able to start to look at this
12 fishery more intently and come up with some type of assessment.

13
14 **CHAIRMAN POWERS:** What I am hearing, Jim, is a motion to the
15 effect of Alternative 3.

16
17 **DR. NANCE:** Well, 2 and 3, really, give the council some
18 latitude in what they would like to do. 3 is setting the
19 federal waters, and it gives an MSY proxy for the federal
20 waters, and Alternative 2 just keeps the escapement.

21
22 **CHAIRMAN POWERS:** This is where I have, I guess, a
23 misunderstanding. I don't think Alternative 3 says anything
24 about federal waters. I thought we were just dealing with the
25 stock.

26
27 **DR. NANCE:** Well, it is. What I'm saying is Alternative 2 says
28 nothing about offshore, and it's basically escapement.
29 Alternative 3 at least talks about a Gulf-wide assessment, which
30 I am assuming includes federal waters.

31
32 **CHAIRMAN POWERS:** That is why I was sort of leaning to Luiz's
33 point that, from a stock standpoint, stock-wide federal and
34 state waters, what our advice is, it's that an MSY proxy of 30
35 percent is good, reasonable, and without getting into the detail
36 of Alternative 2. Is there a motion, if that's the will? Is
37 there a motion, John?

38
39 **MR. MARESKA:** I will make the motion, and so the SSC will
40 recommend the MSY proxy for red drum be Alternative 3.

41
42 **DR. NANCE:** I will second that.

43
44 **CHAIRMAN POWERS:** We have a second. All right. Again, as this
45 meeting gets characterized in the minutes and in the summary and
46 what Luiz will convey to the council, is this discussion we had
47 about the differences in individual states, and we recognize
48 that, but there are a number of ways that that can be

1 approached, with still the overall MSY proxy being 30 percent.
2 Do we want any more discussion about this?

3
4 **MR. BLANCHET:** Well, I don't know if you want more discussion or
5 not, but I would oppose the motion as it's currently drafted,
6 primarily because, at this point, without any new information on
7 the status of red drum, we are changing the current target for
8 management, and I don't see the rationale.

9
10 **DR. FROESCHKE:** Harry, I guess I don't quite understand that.
11 To me, it's based on the 30 percent escapement rate, which it
12 sounded like, after the original 20 percent escapement was based
13 to mimic a 20 percent SPR, and it was later raised to a 30
14 percent escapement, with the assumption that that would be
15 equivalent to 30 percent SPR.

16
17 **MR. BLANCHET:** That is incorrect.

18
19 **MR. RINDONE:** The 20 percent escapement rate was not based on
20 the 20 percent SPR. It was based on the amount of spawning
21 stock biomass yielding from a 20 percent escapement rate, and so
22 it was increased the 30 percent when the moratorium on all
23 fishing -- 30 percent escapement when the moratorium on all
24 fishing in the EEZ was implemented in Amendment 2. Then the
25 following amendment, Amendment 3, just talked about stock
26 assessments that NMFS was going to conduct for red drum. Anyway,
27 the current management target for red drum in federal waters is
28 an OFL and ABC of zero, and that's not being recommended to be
29 modified here.

30
31 **CHAIRMAN POWERS:** What I am interpreting Harry as saying is that
32 there is an implied SPR that's been used as a proxy that is
33 different from 30 percent, and so, by us saying that we go along
34 with 30 percent, it's a change, and, therefore, if you're going
35 to change something, you ought to have an argument, and that's
36 just to recapitulate, but I can't -- I don't really remember the
37 history of what the implied or implicit arguments were for
38 particular SPRs. That sort of history, I'm not aware of.

39
40 **DR. NANCE:** It says though, in Alternative 3, it says, as
41 discussed above, the current policy of a 30 percent escapement
42 is considered approximately equivalent to a 30 percent SPR, and
43 so, if it's not, then we need to change that sentence.

44
45 **DR. FROESCHKE:** I agree, and I guess that was my understanding,
46 and I guess we'll have to dig into that.

47
48 **DR. BARBIERI:** Jim, can you repeat that part? I don't --

1
2 **DR. NANCE:** I am just saying that it says in the document here,
3 in Alternative 3, it says that, as discussed above, the current
4 policy, which is talking about what we have on the books right
5 now, the current policy of a 30 percent escapement is considered
6 approximately equivalent to a 30 percent SPR, and so, if that's
7 incorrect, we need to change that sentence.

8
9 **CHAIRMAN POWERS:** Bob.

10
11 **MR. GILL:** Thank you, Mr. Chairman. Similarly, in Alternative
12 2, which is the above portion, the second sentence, and it
13 effectively sets and locks that in, Jim.

14
15 **MR. RINDONE:** Jim, I have the amendment up, which clarifies it.

16
17 **CHAIRMAN POWERS:** Ryan Rindone.

18
19 **MR. RINDONE:** Thank you, Mr. Chair. This is from Amendment 2,
20 and it says that Goodyear concluded that, given the high
21 mortality rate associated with the fishery on juveniles, it's
22 likely that any significant increase in fishing mortality on
23 adults would endanger recruitment inshore, and this would result
24 in the lowering of the number of spawners and compression of the
25 age distribution on spawners into the first few reproductive
26 ages.

27
28 He concluded that a 20 percent spawning stock biomass per
29 recruit ratio was a reasonable goal for maintaining the spawning
30 stock, but that a 20 percent escapement goal in Amendment 1 was
31 incompatible with this goal, because of natural and fishing
32 mortality on the adults, and that analysis was what ultimately
33 led to a 30 percent escapement rate that was recommended in
34 Amendment 2.

35
36 **CHAIRMAN POWERS:** Which is what Harry just said, and I think
37 Harry has a better memory than most of us, but we do have this
38 motion.

39
40 **MR. BLANCHET:** I object to that last statement.

41
42 **CHAIRMAN POWERS:** We do have this motion on the floor. John,
43 you were the one that made the motion, and I don't know the
44 Roberts Rules of Order, but, given the uncertainty about what
45 the existing measures were based on, the 20 percent, perhaps, in
46 terms of the amendment, do you want to withdraw the motion, or
47 do you want to vote on it?

1 **MR. MARESKA:** I will withdraw it until we can get some clarity
2 as to what it was actually based upon, 20 percent or 30 percent
3 SPR.
4

5 **CHAIRMAN POWERS:** The seconder also said that. I think, in
6 terms of our recommendation, over the short term, it's basically
7 go back and look at this, in terms of these particular
8 alternatives, and there is two things that come out of this
9 discussion, I think, from us, and one is that what is the
10 implicit objective of SPR that has been in place, and then,
11 secondly, we as the SSC will probably not be talking about
12 escapements of individual states and that we're only looking at
13 the overall stock-wide level for the stock as a whole. That
14 would be, I think, as much as we're going to say about this
15 particular item.
16

17 **DR. FROESCHKE:** Okay. That's helpful.
18

19 **CHAIRMAN POWERS:** We are a little before -- This seems like a
20 good point to have a break for fifteen minutes, before we go on
21 to the MFMT sorts of issues. We're going to break for fifteen
22 minutes.
23

24 (Whereupon, a brief recess was taken.)
25

26 **CHAIRMAN POWERS:** All right. We are under 2.2, Action 2,
27 getting into the MFMT, the maximum fishing mortality rate
28 threshold.
29

30 **DR. FROESCHKE:** The good news is the first action had three
31 parts, and the remaining three actions only have one part, and
32 so we've made more progress than we look like. Hopefully this
33 action will be more straightforward. The way that we've tried
34 to frame this, in talking with the Science Center and all of
35 that, is the maximum fishing mortality threshold should dovetail
36 nicely with the MSY proxy, so there is sort of that.
37

38 The other thing on this one is the Alternative 1 is different,
39 and this one, in the generic whatever that was in 1999, it was
40 an amendment that established SDC for the reef fish stocks.
41 However, it was rejected, with the exception of the MFMT, and so
42 all reef fish stocks have an MFMT of F 30 percent SPR, for red
43 drum and reef fish, with the exception of red snapper, which is
44 26 percent, and goliath grouper is 50 percent, and gray snapper
45 is 26 percent, assuming the amendment that they're going to take
46 final action on, we hope in August, is completed and
47 implemented.
48

1 In this case, Alternative 1 essentially is a viable alternative.
2 Alternative 2 essentially says, for all the stocks in this one,
3 that we would define an MSY proxy in Actions 1.1 through 1.3,
4 and we would set the MFMT equal to the MSY proxy for each stock
5 or stock complex, and so that would essentially -- Whatever you
6 all would decide in those three actions, the MFMT would mirror
7 that, and it would change correspondingly.

8
9 Alternative 3, again, this is one of those that you could adopt
10 in conjunction with Alternative 2, and it just says, if the
11 stock is in a rebuilding plan, you would set the MFMT equal to
12 the mortality rate that is basically F rebuild, and then, after
13 the stock has recovered, the MFMT would go back to what it would
14 be before, as defined in either Alternative 1 or Alternative 2.

15
16 Really, that's the way it is defined, and the way that the
17 stocks would be is it would either be the stock or the stock
18 complex, as identified above, and, if we were to change those,
19 it would be our intention that this would just go along with
20 that, sort of as a piece.

21
22 **CHAIRMAN POWERS:** Thank you. If the policy is FMSY for MFMT,
23 then how would we measure it? Whatever the proxy is, that's
24 what we would have, but you do mention that Alternative 3 is
25 getting into the issue of a rebuilding plan and whether that
26 MFMT is consistent with the rebuilding plan or what the original
27 MFMT is, and, in my mind, the whole idea of the rebuilding plan
28 is encompassed in Alternative 3. Shannon, you look like you
29 have to say something.

30
31 **DR. CALAY:** Joe, you've known me a long time. I always want to
32 say something. There was a period of time where we were
33 actually calculating the OFLs from stocks in rebuilding plans
34 using F rebuild, and, with the advice from SERO and from the
35 National Office, we reverted back to more of the intention of
36 OFL being from the FMSY, or its proxy projection, and ABC being
37 made off of F rebuild, and that's currently what we think is
38 consistent with the national guidance. Alternative 3, I am
39 pointing out, is a little bit more precautionary than what is
40 required.

41
42 **CHAIRMAN POWERS:** So you can have F above the F rebuild and
43 below the overfishing level.

44
45 **SSC MEMBER:** What do you mean by "can have"?

46
47 **CHAIRMAN POWERS:** There can be situations where a stock is in
48 that position.

1
2 **DR. CALAY:** Yes. I mean, you can be above F rebuild, but below
3 FMSY, or its proxy, and so you're not overfishing, but you
4 remain overfished, and you are rebuilding slower than would be
5 expected, and that's technically not, according to my
6 understanding, overfishing.
7
8 **SSC MEMBER:** As long as you make your target year.
9
10 **DR. CALAY:** You don't necessarily make your target year. That's
11 my point. It might actually delay the -- It could, potentially,
12 delay the rebuilding plan, and you would not make your target in
13 the specified time.
14
15 **CHAIRMAN POWERS:** We have a comment, first.
16
17 **DR. METHOT:** I think my understanding on this is that I would
18 support what Shannon says, in that you would know there is an F
19 OFL and an OFL associated with it. You still can't go there.
20 You still are bound to the F rebuild. The F rebuild is its own
21 limit. It's just that it's a lower limit than the OFL limit,
22 and so I wouldn't say that you can go above it. You can't
23 intentionally go above it. You are still bound by it, but it's
24 not identical with the presumably higher F OFL.
25
26 **CHAIRMAN POWERS:** You're only bound by if deviating from the F
27 rebuild would delay the recovery over a long enough period of
28 time, I suppose. Doug.
29
30 **MR. GREGORY:** If F rebuild is ABC, then we should not be putting
31 a buffer on that, because we have been putting a buffer on F
32 rebuild, and so we've got ABC prime, and we shouldn't be doing
33 that, because it's not OFL. We are not required to do it. I
34 won't say that we shouldn't be doing it, but we're not required
35 to do that, but this is new to me, and I understand what you're
36 saying, because we exceeded F rebuild in 2017.
37
38 **DR. METHOT:** I would think that the analysis that created the F
39 rebuild would have taken into account itself the scientific
40 uncertainty in calculating what F rebuild us, and that should
41 take into account scientific uncertainty. If there is
42 additional management uncertainty about managing to the annual
43 target, then that might be a reason for an additional buffer
44 beyond F rebuild, but I have a hard time seeing that there is an
45 absolute necessity to buffer on F rebuild to get to a lower ABC.
46 I think -- I mean, I think the catch that comes from an F
47 rebuild analysis could be treated as the ABC.
48

1 Karen or Mara, do you have any sense on this, whether or not F
2 rebuild -- The catch that comes from an F rebuild analysis, that
3 that catch, which will be below OFL, that that catch would be
4 the ABC and that there is no need for an additional buffer below
5 that, in order to get to the ABC level, because the presumption
6 would be that the scientific uncertainty in rebuilding has
7 already been taken into account in order to come up with the F
8 rebuild, so that that can be the ABC.

9
10 The presumption I would have would be that the analysis to come
11 up with the F rebuild would, should, take into account
12 scientific uncertainty, and, hence, it itself is effectively an
13 ABC, because an ABC is something that we recommend can be
14 caught, and that catching ABC is okay, and so, if it's okay for
15 rebuilding the stock, it's okay to catch it that year, and you
16 don't need an additional buffer on it, unless there is
17 substantial management uncertainty, and that means that, even
18 though you've set it as your target, you don't have a great
19 chance of hitting it year and year, and, hence, you would need
20 an additional management uncertainty buffer, in which case it's
21 more like an ACL.

22
23 **CHAIRMAN POWERS:** In terms of what we see in front of us, that
24 is saying that, I mean, when it all gets down here, that
25 Alternative 3 is not -- In terms of the rebuilding thing, it
26 would not be how you would define MFMT, and so, in terms of
27 existing policy, Alternative 3 is not really viable, because
28 what Alternative 3 is saying is basically that your overfishing
29 limit is MFMT, except for when it's in rebuilding, and then it's
30 whatever the F rebuild was, and what you're saying is that the
31 existing policy is -- It's basically FMSY.

32
33 **DR. METHOT:** I think it's worth checking on this with the leads
34 in SF. We certainly can do that. Karen and I can initiate that
35 check on your behalf.

36
37 **CHAIRMAN POWERS:** I mean, this came up before. Shannon has made
38 this point before about -- Because I think my interpretation was
39 what Shannon originally said, was that the overfishing level,
40 MFMT, was defined by the rebuilding F.

41
42 **DR. METHOT:** This is partly semantics. I mean, I think, from my
43 perspective, and the way we've characterized it, it's that a
44 rebuilding plan is a temporary deviation from a long-term
45 sustainable plan, and, during the duration of it, the
46 operational limit is the F rebuild, and that doesn't mean the
47 MFMT goes away, but it's just temporarily not the operational
48 limit. The limit is now the F rebuild.

1
2 **CHAIRMAN POWERS:** But, in terms of operational -- From an
3 administrative standpoint, you have to do certain things when
4 it's overfishing, whereas, in other cases, you don't. Steven.

5
6 **MR. ATRAN:** I was trying to find the specific citations in the
7 NS 1 Guidelines, but, basically, the reason why this alternative
8 is in here is because maximum fishing mortality rate is defined
9 as the point beyond which overfishing is occurring, but
10 overfishing is defined, in part, as fishing beyond a rate that
11 is consistent with the rebuilding plan, and so, if you put those
12 two together, then exceeding F rebuild would be overfishing.

13
14 **CHAIRMAN POWERS:** So clearly there is uncertainty about what the
15 policy is, in terms of this, and, for that reason, I don't think
16 we can really comment on Alternative 3, because that's
17 interpreting it in one way, and it may not be the proper
18 interpretation. Luiz.

19
20 **DR. BARBIERI:** Joe, I agree with that. I remember discussions
21 with folks, Roy Crabtree and other folks from the Regional
22 Office, that touched on this issue before, in terms of either a
23 rebuilding plan and having F rebuild versus an OFL and that
24 being really relative to FMSY or its proxy, and so they were
25 seeing those things as different, I remember in conversations,
26 and so we might need further clarification on this before we can
27 weigh-in on this one.

28
29 **CHAIRMAN POWERS:** But I think, in terms of normal operation for
30 a non-rebuilding stock, we agree that it should be pretty
31 standard that the MFMT is equal to whatever the MSY proxy is.
32 Do we want to say anything more than that?

33
34 **DR. FROESCHKE:** Moving forward, we will capture this discussion
35 in the summary report. When Luiz goes to the council meeting,
36 when we're discussing this alternative, it would be my
37 preference that you would kind of give the SSC perspective on
38 this, and we'll try to get some clarification and then bring it
39 back to you guys at a future meeting.

40
41 Has there been a situation in a rebuilding where we have
42 specified something above that? Do you recall, Shannon? You
43 mentioned that we could have an F, effectively, higher than F
44 rebuild, and I was just curious if there was an actual
45 rebuilding plan that we've done in the Gulf where that has
46 occurred.

47
48 **DR. CALAY:** What we've given you when the stock is declared

1 overfished is a rebuilding plan, and, in that case, OFL is
2 calculated using the FMSY, which is generally a proxy, and the
3 ABC is calculated using F rebuild, based on some period of years
4 specified generally by the Gulf Council.

5
6 That is how we've done it. If you exceed ABC, then you're meant
7 to take some accountability measures, and so the reality is that
8 OFL we have always computed from FMSY, ever since I think red
9 grouper, when this first came up and led to the conversations
10 with SERO.

11
12 **DR. BARBIERI:** To that point, Mr. Chairman, and, as Doug pointed
13 out, this is really about an overfishing determination. The
14 stock may periodically depart, for one reason or another, from
15 the F rebuild that is targeted to be achieved each year, and, if
16 it doesn't go above the OFL or MFMT, it doesn't really -- It's
17 not considered that the stock is undergoing overfishing.

18
19 **CHAIRMAN POWERS:** So there is no bite in exceeding the F
20 rebuild.

21
22 **DR. METHOT:** Well, there is, because you are jeopardizing the
23 progress of the rebuilding plan by doing it, and I have found
24 language that says, thus, in rebuilding ABC, rebuilding ABC must
25 be set to reflect the amount of catch consistent with the
26 designated F rebuild in the rebuilding plan, and so it's
27 associating ABC with the rebuilding F, and my understanding is
28 that it maintains as a second line of defense, if you will, the
29 MFMT for overfishing determination, and so you some buffer in
30 between overfishing determination and failing to follow the
31 rebuilding plan, and so there's two places where potentially a
32 violation could occur, but there are separate levels, from my
33 understanding, and I will keep looking.

34
35 **CHAIRMAN POWERS:** John.

36
37 **DR. FROESCHKE:** I am just trying to understand so that we can
38 capture this, but, in practice, for stocks that are undergoing
39 overfishing, at some point SERO will send us a letter that says
40 that Stock X -- Lane snapper, I think we got one too long ago,
41 and we are supposed to take action to end overfishing.

42
43 In this case, if there was a stock assessment that said some
44 stock was severely overfished, and so we had to cut harvest by
45 say 90 percent, and so, at that point, if you're trying to catch
46 that something that far below, then you still wouldn't send us a
47 letter unless we exceeded the catch associated with FMSY, which
48 would be a really big number, and so it would seem, in cases

1 where you are severely overfished, it would almost be impossible
2 to be overfishing until you get closer to the rebuild, but that
3 can't be correct.

4
5 **CHAIRMAN POWERS:** No. In the example you gave, it would be very
6 unlikely that it would not be overfished, which sets it into
7 another set of criteria too, and so --

8
9 **DR. FROESCHKE:** I guess I'm just trying to understand. How far
10 over that F rebuild could we be before we get a letter?

11
12 **CHAIRMAN POWERS:** It's got to be less than the FMSY, or the more
13 traditional MFMT.

14
15 **MR. ATRAN:** Let me correct what I said earlier about the
16 definition of overfishing. I finally found it. Overfishing
17 means to fish at a rate or level that jeopardizes the capacity
18 of a stock or a stock complex to produce MSY on a continuing
19 basis, and so I couldn't find anything that directly links
20 overfishing to rebuilding, and I guess it was my interpretation
21 that that definition meant that, if you're not rebuilding the
22 stock, you're jeopardizing the capacity, and that was my
23 interpretation and not what it says in the NS 1 Guidelines.

24
25 **CHAIRMAN POWERS:** Thank you. That sort of is in line with the
26 interpretation of policy, and so, basically, you're saying that
27 it's not overfishing as long as you keep F under FMSY, and,
28 eventually, it's going to get back there, and so, whether you
29 have a rebuilding plan or not, it's still -- As long as you are
30 below FMSY, then you're not overfishing, and so whether it
31 exceeds the rebuilding plan -- The only way you would know
32 whether it's going to exceed it is if it takes too long to get
33 back.

34
35 **DR. CALAY:** In general, when the ABC is exceeded -- I mean, we
36 are typically asked to analyze the effect of that on rebuilding
37 plans, and so it's not as if it's not noticed. Usually it comes
38 to the Science Center as some request from the council to
39 provide new information.

40
41 **CHAIRMAN POWERS:** I am probably worrying about things that
42 aren't real relevant, and so, again, what we're saying is,
43 essentially, that, the way Alternative 3 is worded, it's not
44 really what we're dealing with here and that Alternative 2 is
45 basically saying that MFMT is equal to FMSY and whatever proxy
46 we have for that, and let's leave it at that.

47
48 **DR. FROESCHKE:** Okay. So, for Alternative 2, you're satisfied

1 with the wording. Alternative 3, we'll work on it and bring it
2 back at some point later, but, for now, we can move to Action 3?

3
4 **CHAIRMAN POWERS:** Yes. No, I guess not. Doug.

5
6 **MR. GREGORY:** Two things. One, I'm still confused. I am
7 looking at the last framework action for red snapper, when the
8 catch targets were increased, and it has tables that list OFL
9 and ABC, and they are very close together, and so OFL is not
10 based on -- OFL, in this instance, is the rebuilding OFL?

11
12 Because OFL, let's say is 16.6, and the ABC is sixteen, and
13 we've still got twelve years to go, thirteen years to go, to
14 rebuild this stock, and how can ABC be that close to OFL if
15 we've got twelve more years to go in rebuilding the stock?

16
17 **DR. METHOT:** I can't answer that, because it's a numbers
18 analysis, but your overfished determination, if it was based
19 upon one minus M, it could be not very far below BMSY, and so
20 maybe it doesn't have that far to go, and maybe that small
21 buffer is enough. I don't know if that's the case or not. I
22 would have to look at the particular rebuilding analysis that
23 came up with that ABC.

24
25 **MR. GREGORY:** I volunteer for the next red snapper stock
26 assessment. My other question is related to fishing mortality,
27 and the council, in a number of instances, has, and this is
28 related to the next subject, MSST, has set MSST at 50 percent of
29 BMSY. It seems to me that the SSC should consider and recommend
30 to the council some, and maybe this is in the ABC control rule
31 discussion tomorrow, and I don't know, but some way of lowering,
32 or a policy of lowering, fishing mortality rate whenever you are
33 below BMSY, but you're not overfished, and so there's not a
34 rebuilding program, but some way to curb what might be potential
35 influence on the population that drives it down, even though
36 technically we're at the proper F level.

37
38 **CHAIRMAN POWERS:** What you're arguing for is to move ahead to
39 the next action item, I think, which is the MSST, which is
40 dealing with precisely those kinds of things.

41
42 **MR. GREGORY:** No. It's when you're between MSST and BMSY. What
43 do you do? Do you continue to fish at FMSY, and, if we do -- If
44 we have been fishing at that level, we either made a mistake or
45 something environmental happened and drove the population below
46 BMSY, and I'm saying, in that case, we should do something more
47 conservative before we get to MSST, whether it's 50 percent or
48 75 percent, or maybe even one minus M. That's all, and it's

1 something for future discussion and something to think about.

2
3 **CHAIRMAN POWERS:** Well, what I am trying to do is close this
4 discussion on MFMT, and so, with that, let's close it, and what
5 you're talking about is how MSST is defined and how to construct
6 the one minus M, and that also relates to the control rule
7 discussion as well.

8
9 We're on MSST. This is something that this council, or this
10 SSC, has been different than a number of the other SSCs, and
11 that is defining MSST as one minus M times BMSY, whereas a lot
12 of the other SSCs have just sort of taken it as a standard 50
13 percent of BMSY, which is Alternative 3 in this case.

14
15 As I recall, some of the argument about the one minus M is
16 particularly for stocks that take a bit more time in rebuilding,
17 and you don't want to let them get too far gone before you start
18 taking actions. That's been the argument anyway. Go ahead.

19
20 **DR. CALAY:** We have been working with many of our stocks and
21 using a defined MSST definition of 50 percent BMSY, and that's
22 the reality of the current state. I just wanted to point out,
23 once again, that the Science Center did do a simulation study
24 looking into MSST, and, in our analyses, you don't get to levels
25 below 75 percent of BMSY just from natural variations in M and
26 recruitment alone without overfishing as well, and so the
27 Science Center analysis did not actually support the levels as
28 low as 50 percent BMSY. That being said, it is, right now,
29 already written into several of the FMPs for most of our
30 assessed stocks.

31
32 **DR. FROESCHKE:** Just for a little background information on
33 this, minimum stock size threshold, again, this is to allow for
34 some variation in biomass below the biomass at MSY before the
35 stock is declared overfished.

36
37 As Shannon discussed, biomass can fluctuate for a variety of
38 reasons. In the past, we have done this different ways for
39 different stocks. Historically, I would say one minus M, where
40 M is the natural mortality rate for the stock at hand, was how
41 it was done before. In general, for -- I think gray snapper was
42 0.15 for a mortality rate, and so that would leave the MSST as
43 0.85, something like that.

44
45 In the more recent past -- Well, MSST can be defined between one
46 and 0.5. 0.5 is as low as we're allowed to set this, and, in
47 the more recent past, we've had Reef Fish Amendment 44, which we
48 looked at seven reef fish stocks and set them all at MSST equals

1 0.5 times BMSY, and then the council is wrapping up this gray
2 snapper amendment, which would also set gray snapper at MSST of
3 0.5, and so that would be Alternative 4. Alternative 3 was
4 intermediate to Alternative 2, the one minus M. Of course, it
5 depends on what M is for each stock, and so this would be the 75
6 percent.

7
8 If you scroll down, there is a little table, Table 2.2.1, and
9 there are four stocks that we're considering, mutton snapper,
10 yellowtail, black grouper, and goliath, which they are jointly
11 managed with the South Atlantic, and the South Atlantic has
12 already defined MSST in their region, and so one option or
13 alternative would be to develop a compatible MSST definition
14 with the South Atlantic for those four stocks.

15
16 Alternative 5 would set MSST at 0.5 times BMSY for all stocks
17 and stock complexes in Sub-Actions 1.1 to 1.3, and then, with
18 the exception of these four stocks, goliath, mutton, yellowtail,
19 and black grouper, we would use the existing definition of MSST
20 defined by the South Atlantic Council. That is sort of the
21 range of alternatives that we have at this point, and I would
22 open the floor for questions or discussion.

23
24 **DR. CALAY:** Sorry to take the floor again, but so, to put it
25 more positively, the Science Center analysis basically supported
26 the 75 percent of SSB at MSY, or its proxy, and one of the
27 reasons for that, in addition to that can arise by the natural
28 variability that we considered in the simulation, but also that
29 stocks tend to be able to recover quickly from that level,
30 whereas, if you drive it down below 50 percent, sometimes you
31 are talking about maybe five years of fishing at F equals zero
32 to recover that stock back to the management threshold, and so
33 the idea is that 75 percent can occur by variation alone, and it
34 tends to be quick to recover from, and that was the lowest level
35 recommended by the Science Center.

36
37 **CHAIRMAN POWERS:** Which is sort of consistent with most of the M
38 values that we use anyway, somewhere between 0.2 and 0.3,
39 usually. Kai.

40
41 **DR. LORENZEN:** On the basis of that, should we recommend not to
42 go down to 50 percent?

43
44 **DR. NANCE:** Or past 50 percent.

45
46 **CHAIRMAN POWERS:** Wait a second. I'm not sure that I heard all
47 of the side comment, and so, whoever made the side comment, make
48 it on the --

1
2 **DR. NANCE:** I was just saying that I didn't know if you could go
3 past 50 percent, and that's all. Kai said don't go down to 50
4 percent, and I said don't go past.
5
6 **DR. LORENZEN:** You should go past anyway, right, and it's at 50
7 percent now, but what Shannon just said is the analysis seems to
8 suggest that you shouldn't even go down to 50.
9
10 **DR. CALAY:** In all cases, we could recover the stock, I think
11 within seven years, at F equals zero from 50 percent.
12
13 **DR. LORENZEN:** But you don't really want to be there, right?
14
15 **DR. CALAY:** You don't necessarily want to have such strong
16 management measures required to recover a stock, is my point,
17 and so, if you want to have more constant catches for the
18 fishing community, the advice from the Science Center would be
19 not to let the stock levels go so low before you require a
20 rebuilding plan, because that can lead to very restrictive catch
21 measures on the fishery.
22
23 **CHAIRMAN POWERS:** What Kai has suggested is a recommendation
24 that is more reflective of just saying that you shouldn't go
25 down to 0.5, which is less restrictive than the recommendation
26 of the Center, which was basically something around 75 percent.
27 Either one is fine with me. Do you want to make a motion?
28
29 **DR. LORENZEN:** That would mean that we are not recommending
30 Alternative 4 or 5, right?
31
32 **DR. FROESCHKE:** Yes, and this would be Alternative 3.
33
34 **DR. LORENZEN:** We are recommending Alternative 3, 2 or 3. I
35 think the point is that 2 seems fine to me, but you just don't
36 want to be at 4 or 5.
37
38 **CHAIRMAN POWERS:** 2 or 3 are more or less equivalent in the way
39 they're actually applied, and so you could say the glass is half
40 empty or half full, depending on which way you want to word it.
41
42 **DR. LORENZEN:** Right. Well, I would say 2 or 3 be the preferred
43 alternatives.
44
45 **DR. NANCE:** Or we could say it the opposite and not recommend 4
46 or 5.
47
48 **DR. LORENZEN:** I wanted to strike a positive tone.

1
2 **CHAIRMAN POWERS:** So that is a motion. We have a second by Jim
3 Nance. Doug and then Kari.
4
5 **MR. GREGORY:** If I remember right, most of our species have an M
6 of less than 0.2, and so there is a big difference between the
7 two.
8
9 **CHAIRMAN POWERS:** I don't know how big, but --
10
11 **DR. FROESCHKE:** If we pull up Table 2.2.2 on the document, that
12 is some representative M from reef fish stocks in the Gulf.
13
14 **CHAIRMAN POWERS:** I think Doug's comment made a good point that
15 a lot of the Ms that we have are less than 0.25, and so,
16 therefore, there is a difference between Alternatives 2 and 3,
17 and so, in the spirit of what the original motion was, we
18 started talking about the glass half empty or glass half full,
19 and we could word it the other way as well.
20
21 **DR. LORENZEN:** Yes, I think we can go to the glass half empty.
22 **Alternatives 4 or 5 not be --**
23
24 **DR. NANCE:** Do we need to include 1 in that then?
25
26 **CHAIRMAN POWERS:** No.
27
28 **DR. NANCE:** If we're saying are recommended, it would be --
29
30 **DR. LORENZEN:** Right, and it has to be the --
31
32 **CHAIRMAN POWERS:** Okay. John.
33
34 **MR. MARESKA:** In regard to Alternative 5 that includes accepting
35 the South Atlantic's MSST definitions, how much is that going to
36 conflict with Alternative 2? Is that too much of a conundrum
37 there?
38
39 **DR. FROESCHKE:** You're asking if we did the one minus M versus
40 the 75 percent for those four stocks, and is that what you're
41 asking, how different are those numbers?
42
43 **MR. MARESKA:** Yes.
44
45 **DR. FROESCHKE:** For goliath, it's quite different. For black
46 grouper and yellowtail, it's 0.19, and so pretty different for
47 most of those.
48

1 **MR. GREGORY:** A quick question. Is goliath a jointly-managed
2 stock?

3
4 **MR. RINDONE:** Not specifically. We don't have a joint FMP with
5 the South Atlantic Council for goliath, and we also don't --
6 It's still done as a southeastern U.S. assessment, but there is
7 no harvest, because it's under a moratorium, and so there is no
8 apportionment of harvest between the councils, and there is no
9 defined knowledge of the stock of total biomass size, and so we
10 don't know how much is in either person's pond.

11
12 **CHAIRMAN POWERS:** Kari.

13
14 **DR. MACLAUHLIN-BUCK:** All of the stocks with MSST in Table
15 1.1.1 are all 0.5 of the biomass at whatever max or their proxy,
16 MSY proxy, and so I don't support any preferred alternative, but
17 I don't support this motion of taking those off the table for
18 the council to consider, because they have that in place for
19 several of these assessed and important stocks.

20
21 **DR. FROESCHKE:** Which table is that?

22
23 **DR. MACLAUHLIN-BUCK:** It's the Table 1.1.1, the one where you
24 have MSY, and that this amendment is not changing any of those
25 things, and so, for this action though, it's going to update all
26 the other stocks that we've talked about with an MSST that is --
27 At least that motion is recommending that the council not even
28 consider the alternatives that would at least keep a consistency
29 across the board, which they may want to at least discuss and
30 get more information about the work that you guys have done with
31 the 0.75.

32
33 I just don't want those -- I don't think any of the alternatives
34 should be recommended as not being considered as preferreds. I
35 still think they're all viable for at least the council to look
36 at.

37
38 **CHAIRMAN POWERS:** Thank you. Kai.

39
40 **DR. LORENZEN:** My interpretation of this would be that it's a
41 recommendation, and so they can still look at them, but we're
42 saying, on the basis of the scientific information we have in
43 front of us, we do not recommend that they prefer those.

44
45 **DR. MACLAUHLIN-BUCK:** But what about the -- Would you recommend
46 that they go back and they look at all the ones where they do
47 have the MSST at 0.5, and that they go back and review that as
48 well?

1
2 **DR. LORENZEN:** Probably.
3
4 **CHAIRMAN POWERS:** That's a separate motion.
5
6 **DR. LORENZEN:** It's a separate motion, but yes.
7
8 **MR. GREGORY:** I am sure Luiz would love to present that to the
9 council.
10
11 **CHAIRMAN POWERS:** This recommendation is a bit stronger than
12 some of the others we have there, and it has lots of
13 ramifications about other species where there is a 50 percent
14 there, but, essentially, what we're saying by this
15 recommendation is that, for these things in Action 3, for these
16 particular species, given the analysis that the Center has done,
17 we would be reticent to establish 50 percent, and there is lots
18 of other issues associated with that, but, of course, Luiz will
19 explain that completely, but that's kind of where we stand, in
20 the way that I interpret this motion, and recognizing that, yes,
21 there is a whole lot of species that have 50 percent, and
22 certainly in other regions even more so.
23
24 Are we at a point that we can vote on this? **Given Kari's**
25 **reticence in voting, all those in favor raise your right hand.**
26 Is somebody counting? I don't think it matters.
27
28 **MR. RINDONE:** It's an overwhelming majority.
29
30 **DR. FROESCHKE:** Eighteen is what I had.
31
32 **CHAIRMAN POWERS:** **Opposed. Four.** Then we have the people on
33 the webinar, if they want to --
34
35 **MR. BLANCHET:** I am opposed.
36
37 **MR. RINDONE:** It carried with four opposed.
38
39 **CHAIRMAN POWERS:** **The motion carries.** Again, it's up to Luiz to
40 kind of explain some of the objections to this and how they
41 relate to the preferred alternatives. Can we move on?
42
43 **DR. FROESCHKE:** Please. Action 4, we saved the best for last.
44 Action 4 deals with optimum yield, and I'm going to just start
45 by -- If you could scroll down below the alternatives, which
46 there are many, in that first paragraph above Table 2.4.1.
47
48 There is a definition that OY should be based on MSY as reduced

1 by relevant economic, social, or ecological factors, and then,
2 to the degree -- There is talk about uncertainty, and, then, to
3 the degree that MSY estimates and management controls are
4 lacking or are unavailable, OY should be set farther from MSY.

5
6 A little bit of context on this is we have IPT,
7 interdisciplinary planning teams, and those are the groups that
8 put together these documents of NMFS and Science Center and
9 council staff, and we had so much invigorating conversation
10 about OY that we formed an OY working group, and we had meetings
11 to better define what we thought were workable alternatives to
12 OY, of which we really made little progress, because it's sort
13 of a nebulous concept. We talked about having a sub-group of
14 the sub-group, but we have not done that.

15
16 While we have it here, Table 2.4.1. we do have OY for all the
17 stocks, and I think there are seven of them or so that primarily
18 the yield -- It's a scalar based on FMSY, or F max, in the case
19 for gag, but, in general, we've done it at 75 percent of FMSY,
20 and greater amberjack is the yield at F 40 percent SPR, and then
21 there is hogfish and other reef fish stocks not listed above,
22 and this was defined in Amendment 1 as 20 percent SPR, and
23 that's a little bit confusing as well, but we have a historian
24 here, and maybe he could help us.

25
26 The way the alternatives -- This is more similar to Action 1.2,
27 where we have -- Each Alternative 1 would be the no action, and
28 then Alternative 2 through however many there are, twelve or
29 thirteen, essentially would define OY for the stock complexes
30 that we discussed earlier or individual stocks, if they were not
31 included in a stock complex.

32
33 In general, each alternative has three options, and so 50
34 percent FMSY, 75 percent, or 90 percent. In general, 75,
35 thereabouts, is probably the most common thing that has been
36 done in the Gulf. Most recently, gray snapper has been selected
37 as a preferred as 90 percent of FMSY, and so, based on the
38 definition, Option c would be more of an aggressive management
39 approach than Option a, with b being intermediate. That is sort
40 of the idea, and, again, the OY is the complexes and the stocks
41 mimic what was done earlier in the document.

42
43 **CHAIRMAN POWERS:** Thank you. This has always been difficult for
44 me, because a lot of the response is -- Not only here, but
45 traditionally, it's to define FOY as just a percentage of MSY,
46 and, yes, it will end up being that, but how you define that
47 percentage is defined by socioeconomic factors and that sort of
48 thing, and so, judging goodness or badness of 50 percent versus

1 75 percent versus 90 percent isn't being related to what, quote,
2 unquote, optimum yield ought to be, and so it's hard to make a
3 discussion without getting into more of the details about the
4 socioeconomic objectives. Will.

5
6 **DR. PATTERSON:** The origin of the 75 percent had nothing to do
7 with economic, social, or ecological factors. This came from
8 SFA and the Restrepo et al. document. That's when these were
9 first adopted and put into the different FMP documents.

10
11 **CHAIRMAN POWERS:** Yes, and that's a default, and, like I said,
12 you will end up with a percentage, at some point, but it's just
13 how you define it. Help me out here.

14
15 **DR. SCYPHERS:** I had two different thoughts on this. One is, in
16 a general philosophy, I could see coming to a number that gets
17 at somewhat of what Shannon was mentioning the last section of
18 preventing F from going to zero and preventing multiyear
19 shutdowns, and I think that could be an OY philosophy, but,
20 species-specific in this, I have a really hard time thinking
21 about how you would choose between any option for a species
22 without even the types of information that usually comes in the
23 stock assessment reports in that environmental justice section
24 that gives you at least some social context of that fishery. I
25 think that's -- As data-poor as that section usually is, and
26 it's usually census-level, county-level, statistics, it gives
27 some considerations to take into account.

28
29 **DR. PATTERSON:** Given the current approach under the
30 reauthorized act, where you have an OFL estimate, oftentimes in
31 our case, based on an assessment, although there can be data-
32 limited methods applied, but you have an estimate of the OFL,
33 and then you have a buffer that reduces that to ABC, based on
34 scientific uncertainty, and the ACL is less than or equal to the
35 ABC, and then we have an ACT in some of our fisheries that is
36 based on management uncertainty.

37
38 You have the OFL that is estimated, and then there's a buffer
39 and a buffer from that, and do we really -- Does the council
40 really need to define an optimum yield for these fisheries? I
41 mean, it's not really how it's being managed, regardless if you
42 have the definition on the books or not.

43
44 **CHAIRMAN POWERS:** Kari.

45
46 **DR. MACLAUHLIN-BUCK:** I agree with that. I feel like maybe --
47 I don't know, but maybe just because we've been in a world of
48 ABCs and ACLs, and, if you have a value or, I guess, a yield in

1 pounds or something defined for OY for a species or a complex,
2 and your removals exceed that, what happens -- What does that
3 mean for the fishermen, and what does that mean for the fish?
4

5 If it doesn't, because there is such a buffer in between,
6 because of how the system is set up, then do we need an OY? The
7 South Atlantic sets their OY as equal to ABC, which is ACL, and
8 so what they're saying is that the optimum yield, the best use
9 of the resource, is to max out your ABC and your ACL, and that's
10 just how they have defined it, but, at the same time, like the
11 OY doesn't matter, because the ABC and the ACL is all, actually
12 in the real world, that is affecting the fish and the fishermen.
13

14 **CHAIRMAN POWERS:** Thank you. Somebody in the back is waving
15 their hand. Go ahead.
16

17 **DR. HARFORD:** I just want to say that I agree with the last two
18 statements. I mean, it seems like all the decisions are based
19 on ABC, and the buffers are built in, but I was wondering, for
20 the sake of this discussion, could we do the thought experiment
21 of like what economic and social conditions would necessitate a
22 50 percent value versus a 90 percent value, and I'm just trying
23 to wrap my head around why would you choose 50 over 90, under
24 what conditions.
25

26 **DR. PATTERSON:** If you run that experiment, then, if you say the
27 OY -- There is no reason to believe the OY is any less than 90
28 percent of the FMSY, the yield at FMSY, and you calculate your
29 OFL, and then you have a buffer to ABC, and then maybe you have
30 another buffer to ACT, and that value is below the yield at 90
31 percent of FMSY. Then you have a situation where your target is
32 actually below what you said the optimum yield is for the
33 fishery, and so that creates a really weird dynamic.
34

35 **DR. HARFORD:** Yes, but I guess I'm thinking more along the lines
36 of like what would the stock and the fishery look like, in terms
37 of its socioeconomic value, and what would be the metrics that
38 we would gauge going from 90 to 50? I understand what you're
39 saying, but are we talking about like an intensive commercial
40 fishery versus a culturally-important recreational fishery,
41 those types of qualifications.
42

43 **DR. PATTERSON:** Yes, that's a really good point, and Clay did an
44 analysis a couple of years ago looking at the recreational red
45 snapper fishery versus commercial, and one is access, and the
46 maximum economic yield may exist with a stock fished well below
47 BMSY, and the other would perhaps want to have the stock above
48 BMSY, so you have more constant catches that could be predicted

1 into the future, and so it's not -- I mean, you have so many
2 different sectors in some fisheries, and it's really difficult
3 to come up with one approach or one number to satisfy that.

4
5 **CHAIRMAN POWERS:** That's kind of where I was thinking, that it
6 would be hard for us as an SSC to really comment on these
7 particular percentages, but rather what you're suggesting is, if
8 we could have comments about the kinds of metrics that would
9 cause you to go up or down in this scale between 50 percent and
10 100 percent of FMSY. I am not sure that we're prepared for that
11 yet, but -- Mara, did you have something?

12
13 **MS. LEVY:** Thank you for letting me comment. I don't want to
14 interject too much, but I feel like I need to comment when I
15 hear things about why do we need an OY. I mean, I will just
16 say, from a legal perspective, the Magnuson Act is based around
17 achieving optimum yield, and it's a required component of the
18 act, and I will also say that optimum yield is different than an
19 annual catch limit or an ABC.

20
21 Optimum yield is supposed to be a long-term value that has the
22 potential to fluctuate, based on MSY, which is a long-term value
23 that has the potential to fluctuate, and you achieve that on an
24 annual basis by establishing the catch limits, and those
25 concepts tend to get conflated a lot, and people get confused by
26 them, but I think it's really important to keep the long-term
27 versus the annual targets that get you to that long-term yield
28 separate.

29
30 Also, I know that the South Atlantic has set a number of stocks
31 at OY equals ACL equals ABC, but I will say, in the most recent
32 guidelines, NMFS was pretty specific that that's not necessarily
33 appropriate. It's not necessarily appropriate to just equate
34 the long-term optimum yield with an annual catch limit. I think
35 you would need to have some discussion about how that's
36 appropriate, if you're going to do it. Thanks.

37
38 **CHAIRMAN POWERS:** Thank you. Doug.

39
40 **MR. GREGORY:** I am looking at the Restrepo document from 2006 or
41 2007, and they reference a paper by Pamela Mace, where she
42 looked at 75 percent of the fishing mortality rate at MSY, and
43 she didn't look at 50 or 90 percent, but, at 75 percent, the
44 conclusion was that the equilibrium yields would be about 94
45 percent of MSY, or higher, and that equilibrium biomass levels
46 would be between 125 and 131 percent of BMSY, and so it was a
47 bit more conservative.

1 In the Restrepo document, they did not relate that to OY, but
2 they do have a number of analyses of the 75 percent, and they
3 say that fishing at 75 percent of FMSY obviously would reduce
4 the probability of a stock declining to MSST, which in this
5 discussion was 50 percent.

6
7 Relative to my question earlier, they also mention that, when
8 you are in a stock status between MSST and MSY, it's probably a
9 good idea to go to 75 percent of FMSY, and all that makes sense,
10 but it's not directly related to OY, and it looks like, at least
11 for our purposes, 75 percent of FMSY, even though it's a 25
12 percent reduction in fishing mortality, is a large reduction,
13 and it could have a significant effect on immediate quotas, but,
14 in the long run, equilibrium run, it gives you equivalent yield
15 and a little bit higher biomass and MSY.

16
17 **CHAIRMAN POWERS:** This relates to the good enough yield comment
18 that I made this morning, and that was precisely Pamela's paper
19 that I was thinking of. A 5 percent change in yield, but a 25
20 percent change in F, that's a lot of people, and, if you reduce
21 25 percent participation, you would hear about it, and that is
22 an important consideration, and it should be considered in the
23 context of optimum yield, and so I guess my personal opinion is
24 I am having difficult defining any percentage in terms of the
25 scientific basis. Rick.

26
27 **DR. METHOT:** Well, there certainly is an expectation that there
28 is some percentage in the establishment of the ABC, that the ABC
29 is below the OFL to account for the necessary scientific
30 uncertainty in the OFL itself, and so they have an ABC control
31 rule that has some buffer, which is basically what the 75
32 percent was, the proxy dating from 1998, and that was what the
33 intention was, to provide a basis for that buffer.

34
35 Today, if you don't have it today, there is nothing that would
36 say that you couldn't step it in, and you don't have to
37 immediately jump from 100 percent to 75 percent. As long as you
38 are preventing overfishing along the way, you could step it in
39 over five years or so.

40
41 **CHAIRMAN POWERS:** Sure. Steven.

42
43 **MR. ATRAN:** Thank you for indulging me on this. I was going to
44 try not to say anything, but this section has been heavily
45 rewritten since I last saw it, and I do think we need to have
46 OY, if for no other reason than, as Mara said, it is in the
47 Magnuson Act, and we need to figure out a way to use it, because
48 it seems to have fallen by the wayside with all of these

1 additional reference points that were adopted in 2006.

2
3 One thing that I had been working on before I left was to try to
4 come up with a spreadsheet that would explicitly account for
5 specific environmental, ecological, and social factors and come
6 up with a number that could then be scaled to some buffer to
7 reduce from ABC, or from ACL, whatever you wanted to do, in
8 order to account for those items explicitly, and I had based
9 that on the stock prioritization spreadsheet that the Science
10 Center had started working on, because it also looked at some of
11 these specific factors. I think this does comply with the
12 intent of OY, which is to specifically look at these factors.

13
14 Now, one thing -- John and I were talking at lunch, and we have
15 an ACL control rule, and I know Mara said that generally they
16 wouldn't consider ACL equals OY to be acceptable, but it seems
17 to me that we might be able to modify that ACL control rule to
18 include some of these environmental and ecological and economic
19 and social factors.

20
21 Right now, it has a number of factors related to management
22 uncertainty, where a score is given to it, and it's subjective,
23 in some cases, but those scores are added up, and then that
24 total number is converted to a buffer that, right now, is
25 between zero and 30 percent.

26
27 You could add additional items to that spreadsheet that are some of
28 these economic, ecological, and social factors, and then you
29 would have an ACL that incorporates both ACL components of
30 management uncertainty and the OY components of adjusting for
31 these other factors, and so that might be something to consider.

32
33 What you would do is the buffer, the percent buffer, would be a
34 constant OY, and then the application of that to an annual ACL
35 would be your annual value of that. I mean, that's just a
36 thought, but I do think that you need to include OY, and, right
37 now, I think you do need to find some way to at least implicitly
38 account for some of these factors, instead of just trying to
39 come up with some number that's just a buffer.

40
41 **CHAIRMAN POWERS:** Thank you. The council process needs an
42 optimum yield. Whether we do it or not is another story. Will.

43
44 **DR. PATTERSON:** In the act itself, there is a lot of room for
45 interpretation about things and about OFL and the ABC and the
46 ACL, and ACT is not even there. That came in the guidance, and
47 so they have these guidance documents to try to operationalize
48 the act, and there is nothing in the guidance that talks about

1 optimum yield, as far as specifying how to estimate it or what
2 it might represent.

3
4 I think one alternative, instead of just saying no action,
5 Alternative 1, the council could simply put the language from
6 the act that talks about the greatest long-term benefit to the
7 nation, or this would be to the region, and just leave it at
8 that. It doesn't -- It's not specified in the act, and it's not
9 specified in the guidance, and it's not utilized for management,
10 and there you have it.

11
12 **CHAIRMAN POWERS:** Thank you. Another thing we could do is look
13 at these options and not make any comment. Like I said, and was
14 already mentioned, the council process needs to have an optimum
15 yield, and here are a set of options to do that, but do we as an
16 SSC really want to comment on pros and cons of this?

17
18 Now, it was brought up earlier that one way to talk about pros
19 and cons is to talk more conceptually about higher percentages
20 or lower percentages and likely effects, in terms of
21 socioeconomics about, in a relative sense, what might happen, or
22 key issues that the council should think about when they choose
23 amongst these options, but I'm not sure that we're prepared for
24 that yet. Luiz.

25
26 **DR. BARBIERI:** Thank you. Well, I think that, fundamentally,
27 this is a philosophical discussion, a little bit, right, and so
28 it's really us trying to operate in that limit-and-target
29 reference points sort of scenario, and having an optimum yield
30 can be helpful, I think, in situations, and we've seen the
31 situations in stocks that we have had here, when we had stocks
32 at a biomass level that was pretty high, and we provide our ABC
33 and OFL sometimes at a level that would lead to fishing down the
34 stock to something more like BMSY, because we are basing our
35 advice on that limit reference point and the ABC derived from
36 it, but we may not be informing the council appropriately about
37 what would be the benefits actually in terms of long-term yield
38 of keeping the stock at a higher level of biomass for some
39 fisheries, and not necessarily every single one and every single
40 situation.

41
42 There are situations when there is a major economic benefit and
43 social benefit, in terms of stability of landings over time and
44 avoiding stock fluctuations that could be caused by you always
45 fishing the stock down to a limit reference point or around the
46 limit reference point, and so I think the advantage of OY is to
47 provide some level of long-term stability to that stock that
48 would be beneficial to industry, or should be.

1
2 **CHAIRMAN POWERS:** That's essentially what has been suggested,
3 other sorts of metrics that ought to be considered.

4
5 **DR. BARBIERI:** Right. Operationalizing this right now, Joe, I
6 agree that it's difficult. I mean, how do we choose between
7 those levels there, and does that make any sense in general like
8 this?

9
10 **CHAIRMAN POWERS:** I guess what I'm saying is why do we have to
11 choose, particularly without any basis for it, and we could
12 probably talk in a relative sense about pros and cons, but
13 choosing -- Like Rick and others have said, there will be an
14 optimum yield, and it will be related to FMSY, and it will be
15 related to some percentage of FMSY, and we know that, but
16 picking between these -- Kai.

17
18 **DR. LORENZEN:** To my mind, the benefit of having the OY sort of
19 stipulation is that it encourages the council to make those
20 considerations of social and economic considerations and bring
21 them in.

22
23 By saying, well, let's fix it at this number, we are not helping
24 that, and the other criteria that we have, the ABCs and the
25 MSSTs and so on, those are there to manage the -- Account for
26 uncertainty and manage the risk of overfishing, and so this is
27 different, to my mind, and this is not for that purpose, but
28 it's for considering those social and sort of ecological, in the
29 sense of interactions with other species and so on
30 considerations, and so I think we should encourage that, but, by
31 just fixing it at some percentage, we are not doing that.

32
33 **CHAIRMAN POWERS:** All right. Thank you. I am not hearing any
34 motion or any movement toward much to say, and so what I suggest
35 is the following, that we adjourn now, and I will leave this
36 agenda item open for ten minutes tomorrow morning, and, if
37 somebody has some set of recommendations that would be useful to
38 the council, then we would consider it within that ten minutes,
39 and let's go from there.

40
41 Without objection to that, then I think we would adjourn for the
42 evening, and it's ten minutes to five now, and we were scheduled
43 to end at 5:00, and so let's adjourn for the evening and come
44 back at 8:30 tomorrow morning.

45
46 (Whereupon, the meeting recessed on July 30, 2019.)

47
48 - - -

1
2 July 31, 2019
3

4 WEDNESDAY MORNING SESSION
5

6 - - -
7

8 The Standing & Special Reef Fish, Mackerel, and Socioeconomic
9 Scientific and Statistical Committees of the Gulf of Mexico
10 Fishery Management Council reconvened at the Gulf Council Office
11 on Wednesday morning, July 31, 2019, and was called to order by
12 Chairman Joe Powers.
13

14 **CHAIRMAN POWERS:** Welcome back. The sign-up sheet is being
15 passed around. Make sure you sign up. Secondly, lunch is being
16 delivered again today, but what I would like to do let's only
17 take like a half-hour for lunch to eat, so we can speed up the
18 process, because a number of people are leaving at four-ish, and
19 so let's try to do that. We were left with Agenda Item VI, and
20 so I open the floor for comments or motions. Ken.
21

22 **DR. ROBERTS:** Thank you, Mr. Chairman. I haven't brought mine
23 up on the screen yet, but we ended yesterday with a table of
24 OYs, and I think there were seven of them listed, and my
25 question is what was the origin, what document, where was the
26 analysis, that those OY numbers came from?
27

28 **DR. FROESCHKE:** Well, in general, the source is there. As far
29 as the actual discussions and things, I can't comment too much
30 on those, other than gray snapper was very recent, and the
31 council essentially had a conversation that they felt that this
32 was an abundant species, and it's heavily targeted, and they
33 thought it was productive and they felt that they could be
34 pretty aggressive in the management strategy, and that's why
35 they set the yield at FMSY. It wasn't a numerical discussion.
36 Paul, you can correct me if I'm wrong, but it wasn't a
37 mathematical equation that they arrived at that. This was a
38 management decision.
39

40 **CHAIRMAN POWERS:** Thank you.
41

42 **DR. ROBERTS:** The origin of the question is that -- Is anyone
43 able to certify that that was based on the best scientific
44 information available, or is it value judgments? Let me
45 clarify. You go into fisheries management, and the goal line is
46 OY, and we go through lots of discussion about the components
47 that go into various models, and then, when you get to the goal
48 line, it doesn't seem that the rigor is there, or at least the

1 SSC is involved, and maybe we shouldn't be involved, but that is
2 my concern with those numbers that crop up like that without a
3 lot of documentation or rigor.

4
5 **CHAIRMAN POWERS:** Thank you. I think that is sort of a
6 sentiment that was expressed yesterday as well and that there
7 needs to be a better connection, I think, between what are the
8 real goals that consist of optimum yield and how that gets
9 translated into some sort of percentage, and I think, at this
10 stage, there wasn't a lot of justification for that range. My
11 expectation is you will probably end up in something in that
12 range, but there is no justification of one versus another, and
13 I think that's the signal that we're trying to send, more than
14 anything else. Luiz.

15
16 **DR. BARBIERI:** John or Ryan or Paul, has the council provided
17 any guidance, from their perspective, regarding OY? Have they
18 made any statement that would kind of present their position, or
19 their intent? I mean, OY is a very explicit sort of management
20 goal kind of thing, and I think, for us, and this might be
21 related to Ken's comments, but, for us to evaluate the science
22 underpinnings of what's being presented here, it would be good
23 to have a more explicit discussion of what the council's
24 intentions are regarding OY, if anything has been presented.

25
26 **DR. MICKLE:** Luiz, that's a good question, and I'm running
27 through my mind on species that the SSC has brought forward and
28 those discussions have bubbled up on the council floor, and I
29 would have to say that I think it was brought up with
30 triggerfish two years ago, and we would have to pull the
31 minutes, and Carrie is probably better at this, and I was brand-
32 new at that point, but, understanding the OY discussions, I
33 think it was species specific, and it was fairly light, but that
34 brings up a great point.

35
36 I think, if it is brought up in a more formal way, maybe as an
37 agenda item, or maybe just as discussion when the SSC report is
38 given at council, to kind of prod the -- Get that regional
39 discussion on OY and how it feeds into maybe some guidance for
40 the SSC would be hugely beneficial, I am thinking, and I would
41 like to know if you all would think that would be beneficial,
42 because I know that guidelines are helpful, because the science
43 is so in-depth, and these meetings are so heavy on the material,
44 that, obviously, guidance increases efficiency, and so I would
45 love to hear you all's thoughts on it, and also what you all
46 think of actually formalizing a discussion on the council floor
47 of OY and how it feeds into management advice for the SSC,
48 giving that guidance as well as maybe a formal agenda item in a

1 future meeting, but, of course, that request needs to be done at
2 the council, but, obviously, your opinions are very influential
3 on the discussions of the council, and we definitely want to
4 know that, or I would. Thank you.

5
6 **CHAIRMAN POWERS:** Thank you. Before I get to Will, the
7 agreement was ten minutes, unless we can come up with something
8 concrete. Will.

9
10 **DR. PATTERSON:** I think there might be some legal issue here if
11 the council selects any of these as their alternatives as OY and
12 then the ABC and ACL for a given assessment come back and the
13 catch advice is above what the yield at these levels of F would
14 be, because, although it's not as clear in the guidance from
15 this iteration of the act, in 1996, after the SFA, the guidance
16 was that OY could be treated as a target, whereas the FMSY value
17 would be the threshold, and so it goes back to Caddy's work on
18 thresholds and targets, and I think a lot of this language, or
19 these numbers, stem from that approach as well as the Restrepo
20 et al. analysis that indicated, going back to Mace's work about
21 75 percent FMSY as perhaps a better target than fishing at FMSY.

22
23 I think there is that practical side of things, but then there's
24 also what happens if you set -- The ABC and the ACL are above
25 what you're saying is optimum for the fishery, and so I don't
26 really know what the legal ramifications of that might be, but
27 it seems kind of dangerous.

28
29 OY, the definition is that it's a reduction from MSY to achieve
30 the greatest overall benefits to the nation, right, and so
31 that's pretty amorphous, and it's supposed to be based on
32 ecological, economic, and other considerations, and so perhaps
33 one of your alternatives could just be that definition of OY and
34 then say, absent data or analysis to estimate what those
35 considerations mean, as far as reduction from the MSY level, in
36 any given year, the ACL will be treated as the annual
37 realization of OY.

38
39 That way, you will never be above it, and it's right at it. It
40 gets back to the logic that the South Atlantic seems to have
41 adopted, and it will get you away from this potential issue of
42 having your OY being set below what your ACL is for a given
43 fishery in a given year.

44
45 **CHAIRMAN POWERS:** Luiz.

46
47 **DR. BARBIERI:** Well, I don't mean to overextend this discussion,
48 but I just think that, right now, there is somewhat of a

1 discontinuity between us and the council regarding this issue,
2 philosophically, a common understanding, so to speak, from us
3 and from the council on what our expectations are regarding
4 setting a policy for the council that has to do with
5 establishing OY for a whole variety of stocks in several fishery
6 management plans.

7
8 I mean, I wonder if we could organize some kind of meeting,
9 workshop or whatever we could do, that would involve SSC and
10 council members and others, the Science Center and SERO, but
11 something that would bring folks together, these two groups
12 mainly together, to discuss this issue and identify some of the
13 sort of points of connection or common understanding of some of
14 this, because, right now, we're trying to interpret, I guess,
15 what the council wants, and we're looking at this from this
16 technical, very operational, but not really having a common
17 understanding of the ultimate goal here that we want to reach,
18 and that would be my recommendation.

19
20 **CHAIRMAN POWERS:** I think that's a good way to put it, and you
21 are an appropriate person to convey this to the council.

22
23 **MR. BLANCHET:** Mr. Chairman, didn't the Socioeconomic Panel or
24 one of those iterations consider this fairly recently? I mean,
25 that seems like that is the appropriate venue for this to get
26 developed. Rather than having a bunch of stock guys work over
27 it, have a bunch of socioeconomic guys work over the
28 socioeconomic issues.

29
30 **CHAIRMAN POWERS:** Thank you. That's an operational way to deal
31 with it.

32
33 **MR. HOOD:** Very quickly and to the point that Luiz is making,
34 this September, there is going to be a meeting of the Southeast
35 social scientists, and so it will be council staff, Science
36 Center staff, SERO staff, and they're going to be getting
37 together to talk about a variety of issues, and one of the
38 issues that is on the agenda is OY.

39
40 **DISCUSSION OF ALTERNATIVE ABC CONTROL RULE**

41
42 **CHAIRMAN POWERS:** Thank you. I think that would be really
43 helpful. Any other comments on this? I want to move on. We
44 are finished with Agenda Item VI, and we're moving on to Agenda
45 Item VII, and this is rethinking the control rule.

46
47 A little bit of background here, and I think it was at the March
48 meeting, we agreed that we need to relook at some of these

1 issues about the individual tiers and how we got to where we
2 were, and Shannon made the commitment that the Center would look
3 at this, and this is a response to that commitment, and so let
4 me, before we begin this discussion, turn this presentation over
5 to Shannon and kind of see where we have moved in the interim.

6
7 **DR. CALAY:** Thank you, Joe. Some of you may recognize this
8 presentation. Large portions of this presentation have been
9 presented to the Gulf Council in I believe 2016 and also to the
10 Caribbean Council, and so a lot of this content was developed by
11 Clay Porch and also taken from various national guidance
12 documents.

13
14 This is our concept of moving forward to revitalize the ABC
15 control rule, and, specifically, how to better characterize
16 scientific uncertainty, because, right now, the methodology of
17 using the tiers and dimensions table tends to produce results
18 that are with a very small buffer between OFL and ABC that we do
19 not believe fully represents our scientific uncertainty.

20
21 Most of you have seen this slide before, and I just provide it
22 for background material. There are all of the various levels,
23 the overfishing limit, the acceptable biological catch, the
24 annual catch limit, and the annual catch target, and this
25 particular presentation will focus on OFL and ABC and
26 establishing that buffer, which is intended to represent the
27 scientific uncertainty.

28
29 National Standard 1, at least when this presentation was
30 developed, did say that stocks and stock complexes that are in
31 the fishery management plans must evaluate and describe, in
32 their FMPs, the maximum sustainable yield and status
33 determination criteria, optimum yield, specify an ABC control
34 rule, and to specify mechanisms for ACLs and ACTs.

35
36 These are some definitions, for those who are unfamiliar with
37 the acronyms, but I think, here, we're all quite familiar with
38 these.

39
40 Optimum yield is actually outside of the topic for
41 reestablishing the ABC control rule, but I did want to point out
42 that OY is prescribed on the basis of MSY, such that it is
43 reduced from MSY by any relevant economic, social, and
44 ecological factors, and, also, in the case of an overfished
45 fishery, OY would provide for rebuilding to a level consistent
46 with producing MSY in such a fishery.

47
48 An ABC control rule is simply an agreed procedure which is

1 adopted in the FMP for setting the ABC of a stock as a function
2 of the OFL, and each council was given the responsibility to
3 establish an ABC control rule based on scientific advice from
4 the SSC, and many of you were actually on this SSC when our
5 first ABC control rule was developed around 2010.

6
7 The SSCs must recommend ABCs to the council, and the SSCs may
8 recommend an ABC that differs from the result of an ABC control
9 rule, but, if they do so, they should explain why, and, in some
10 data-limited cases, let's say that the ABC control rule can
11 involve complex drivers, based on measured stock biomass,
12 uncertainty forecasts, and environmental effects, et cetera, and
13 so we want to establish an ABC control rule that essentially can
14 encompass a range of stock assessment methodologies from data
15 rich that might have environmental indicators, et cetera, all
16 the way down to data-limited approaches, which may be quite
17 simple, and even in cases where catch only is available, and our
18 current ABC control rule does attempt to do that.

19
20 Here is what I was talking with John and Carrie about right
21 before this meeting. This is kind of the idealized functional
22 ABC control rule, and it differs from our current control rule
23 somewhat, in that, below a certain level MSST, it actually
24 reduces the MFMT to the origin at a stock size of zero. Our
25 current ABC control rule does not have a functional shape like
26 this, and so, John, did you want to ask the question you asked
27 me this morning?

28
29 **DR. FROESCHKE:** Sure. This was based on our discussion
30 yesterday in the SDC document regarding the Alternative 3 with
31 the F rebuild, and my understanding was that the horizontal line
32 that's labeled MFMT is equivalent to the MSY proxy and the
33 corresponding OFL. However, in practice, when the biomass falls
34 below the green-dashed line, below the MSST level, that blue
35 line would then correspond to the ABC, and so my question is
36 does that MFMT extend horizontally all the way over to zero, or
37 does it follow the slope of what would now be the ABC at some
38 level above that? Meaning, how much above the diagonal line
39 could you be before you are, quote, unquote, overfishing?

40
41 **DR. CALAY:** To clarify the question, this relates to Alternative
42 3, I believe it was, in the document, the SDC document, we were
43 looking at yesterday, and, in that document, the attempt was, in
44 Alternative 3, to set OFL equal to F rebuild for stocks under a
45 rebuilding plan, and what I had said is that, although that
46 certainly is within the purview of a council, it's not
47 technically required by law, and so this slide refers to the
48 setting of an ABC control rule, and the intention, when I

1 included this slide, was that that descending limb would be part
2 of an ABC control rule and would actually describe essentially
3 the F rebuild, and so ABC would be based on an F rebuild in that
4 part, but that OFL would remain the fishing level that would
5 support MSY in equilibrium.

6
7 Is my understanding consistent? This graphic, when this was
8 developed, because we have taken this from various guidance
9 documents, does it refer only to the ABC control rule, and what
10 would one label that descending limb that goes from --

11
12 **DR. METHOT:** Let me just add in a little bit. I think this
13 might be a little bit before some of the recent changes.

14
15 **DR. CALAY:** Yes.

16
17 **DR. METHOT:** I have seen this implemented with a horizontal line
18 that would be the MFMT that would correspond to the proxy for
19 FMSY, and that would be the overfishing fishing rate, and that
20 would be a horizontal line, and it would not be dependent upon
21 biomass of a stock.

22
23 Then below that line would be a line that looked like this one,
24 but there would be a buffer, even at high biomass levels, for
25 scientific uncertainty, and so this would be the ABC control
26 rule. The ABC control rule is the title of the slide, and this
27 describes an ABC control rule, but the horizontal part would
28 still have a buffer between where it's at right now and the
29 MFMT.

30
31 **DR. ANDERSON:** To that point, I agree with what he says, of
32 course, and he's the head man, but you can do that thing, and,
33 if it was an ABC rule, I think the MFMT horizontal line should
34 be at 40 or something, because it says that the ABC should be
35 less than 50 percent, and then it goes down after that, and, if
36 you had it at 40 and then down, that line could represent ABC,
37 and it doesn't have to be 40, but it should be below 0.5. I
38 have another question here, and I've been confused about what
39 does that M signify.

40
41 **DR. CALAY:** Right, and so this slide was developed when it was
42 typical in our ABC control rule to calculate MSST as one minus
43 the natural mortality, M, times the biomass that supports --
44 Times BMSY, and so M is natural mortality, and it's been just
45 recently that we've moved mostly to MSST being a level far
46 lower, and it's actually now, in most cases, for most assessed
47 stocks, 50 percent of BMSY.

1 **DR. ANDERSON:** If the horizontal axis is measured in biomass,
2 and so that M is the distance on the horizontal axis, natural
3 mortality is a fixed amount of catch, and is that what that is -
4 - It just doesn't make sense in the graph.
5

6 **DR. CALAY:** No. Natural mortality is essentially a rate.
7

8 **DR ANDERSON:** I know that, and that's why I'm asking how can you
9 have a rate on that represented by a distance on that graph.
10

11 **DR. CALAY:** This is just an abstract graphic, and it's some
12 amount of reduction that would relate to the M.
13

14 **CHAIRMAN POWERS:** It's interpreted as a percentage, and the
15 reason you have M in there is it's somewhat related to the life
16 history, and a larger M means that there would be more
17 variability, or that was the argument anyway, at the time, more
18 variability, and the whole idea is you don't want to go through
19 the rigmarole of a recovery plan if it's just a little bit going
20 back and forth around the target.
21

22 **DR. ANDERSON:** It's just confusing, in terms of if you read the
23 geometry of the graph.
24

25 **DR. CALAY:** I apologize for that, and I can certainly work on
26 improving this graphic.
27

28 **DR. ANDERSON:** I also realize that you didn't make this, and so
29 I apologize to you.
30

31 **DR. CALAY:** Well, I could make a new one that would be better,
32 and so I do want to point out though that, given the council's
33 recent adaptation of MSST for most of our assessed stocks, on
34 this figure, if you look at the line that goes down to 1,000,
35 and let's assume that that is BMSY, 1,000 units, and our new
36 MSST definitions would, in most cases, for most assessed stocks,
37 be half of 1,000, and so it would be 500, and that reduction to
38 the origin would not occur until after you are lower than 500.
39 Doug.
40

41 **MR. GREGORY:** That gets to what I was trying to get across
42 yesterday. If we're having an MSST that is one-half or 75
43 percent of BMSY, we probably should be reducing fishing
44 mortality between MSST and BMSY to get back to BMSY or OY, and
45 we're supposed to be at OY, and so I would see a diagonal, and
46 this is something we need to discuss in the future and present
47 to the council, going from 1,000 down to 500, or not down to --
48 Well, to the 500 level, going down to some angle, and then, at

1 the 500 level, you would have, obviously, a steeper diagonal,
2 and it wouldn't necessarily go to zero, because then it's
3 factored into the timeframe, and so it would -- You would
4 probably go to an F of zero before you got to a biomass of zero,
5 but, to me, the important thing is, with one minus M, it didn't
6 matter, and it was close together, but, if MSST is going to be a
7 long way from BMSY, it would be prudent for us to recommend a
8 reduction in -- Not a rebuilding plan, but a revitalizing plan,
9 whatever we want to call it, to reduce fishing mortality below
10 MFMT when you're between MSST and BMSY.

11
12 **DR. CALAY:** I absolutely agree with you, Doug. I think that's
13 the first time that I have 100 percent agreed with you. It
14 happens once in a while, but many, many different fishery
15 management organizations employ a rule similar to that, and
16 usually they have some B limit, some low level of stock biomass,
17 below which F is zero, and then some line that goes from BMSY to
18 that B limit, which is essentially what you're saying, the only
19 additional difference being that, below some low stock size B
20 limit, F would be set to zero.

21
22 In our previous attempts for the ABC control rule, we tried to
23 characterize P^* using our tiers and dimensions table, and, in
24 effect, what that does is, if you have a PDF of the catch at
25 MFMT, which is OFL, the 50th percentile of that PDF is your OFL,
26 and the buffer, P^* , represents that difference between OFL and
27 ABC.

28
29 In most cases, our tiers and dimensions table results in a P^* of
30 about 0.4, and so the reduction is shown on this figure, but
31 this distribution is relatively wide, and, in many cases in our
32 stock assessments, the distributions are much narrower, and it's
33 resulting in a very low buffer in terms of yield between OFL and
34 ABC, and so on the order of -- Go ahead. I see two hands up.

35
36 **DR. BARBIERI:** Not to be picky, Shannon, but that is not P^* that
37 you have there, and so P^* , in this case, would be 40 percent,
38 and it's the area under -- It's the density in the curve there.

39
40 **DR. CALAY:** Yes, it's a buffer to represent -- It's the buffer
41 that takes it from 50 percent on the probability function to 40
42 percent, which is usually what I am calling a P^* of about 0.4.

43
44 **DR. ANDERSON:** But the P^* is not a difference between two deals.
45 The P^* would be a number, and P^* should be 40 percent. Again,
46 it's not your graph, and so sorry.

47
48 **DR. CALAY:** A lot of these graphs were taken from various

1 documents, and I think the point is taken, that there is a
2 buffer between OFL and ABC. In this council, P^* is essentially
3 a probability, and, in that case, P^* would be drawn at 0.4, and
4 the buffer that is labeled P^* would just be called the buffer
5 that represents scientific uncertainty. You people are very
6 harsh critics.

7
8 In this council, and in many others, the control rule may be a
9 tiered approach which addresses various levels of scientific
10 uncertainty, and so it may be that you choose, in a data-rich
11 condition, to apply a lower buffer than in a data-limited
12 condition, and it certainly was the intent of kind of national
13 guidance regarding ABC control rules. It hasn't always
14 functioned that way for every council.

15
16 All right, and so, kind of in words, we would have Tier 1, which
17 would apply to our data-rich stock assessments, and these are
18 stock assessments which provide for an estimate of OFL based on
19 MSY or a proxy and also have the ability to create a probability
20 density function that, in some way, reflects our scientific
21 uncertainty.

22
23 In this case, MFMT is a function, and it's basically that shape
24 that I showed you, where MFMT is BMSY at stock sizes above MSST
25 and declines to the origin below MSST, and so this is generic,
26 and we would have to adapt it if the recommendations that Doug
27 was talking about become a reality for this council, and this
28 mathematics would change somewhat, but this just says to
29 consider an ABC control rule where your MFMT is reduced when
30 your stock size is below the minimum stock size threshold.

31
32 Your OFL is the catch at MFMT, and so that is consistent with
33 our current ABC control rule understanding, and, in the case of
34 Tier 1, your ABC is determined from the PDF of OFL, and here is
35 where -- This is just another generic terminology. In this
36 case, it says where acceptable probability of overfishing is 40
37 percent.

38
39 Now, when we put together this documentation, it was our desire,
40 for the Caribbean Council at least, for the council to determine
41 the acceptable probability of overfishing, and we were
42 recommending about 40 percent as an acceptable number. It turns
43 out that, in most cases, councils are not willing to establish a
44 probability of overfishing, and they have asked the SSCs to
45 provide that sort of advice.

46
47 In actuality, ABC control rules vary by council, and so each
48 council has a very different ABC control rule, and most do

1 attempt, to various degrees, to set the ABCs below OFL in a way
2 that reflects scientific uncertainty, but how they actually do
3 it various by council considerably, and I am not going to go
4 through all of what this says on this slide, but just to point
5 out that the ABC control rules employed by different places look
6 quite different, and they are all attempting to describe that
7 buffer between scientific uncertainty in some rational way.

8
9 This is kind of our existing control rule, and I don't know if I
10 really need to go through it in any detail, and you're probably
11 all quite familiar with it, but, essentially, P* is based on a
12 level of uncertainty that is generated by using a risk
13 determination table, which was actually created by Joe Powers
14 and I, and we would really like you to stop using it. We both
15 don't like it very much.

16
17 Essentially, that tiered control rule considers the level of
18 assessment, whether it's data rich, whether it can produce an
19 FMSY estimate or relies on a proxy, and it depends on whether
20 it's a fully-integrated model, whether the scientific
21 uncertainty is populated internally to the model or created
22 through sensitivity runs, for example, and it talks about the
23 severity of the retrospective pattern and the use of any known
24 environmental covariates. Those are the axes of uncertainty
25 that are included in our tiers and dimensions table.

26
27 In our control rule, OFL is the yield at MFMT, and ABC is the
28 yield at P* percentile from a projection of MFMT or, for
29 overfished stocks, F rebuild.

30
31 Tier 2 in our existing control rule, the Science Center has not
32 found it useful. It has not been used to date, nor do we
33 actually have any assessment methodology that we can propose
34 that would fit into Tier 2, and so that's our viewpoint, is
35 that, currently, as written, it's not particularly useful.

36
37 Tier 3 is our catch only tier, and so there is no assessment on
38 Tier 3, but the stock is unlikely -- This is the language that
39 we used way back when, and we have received some guidance since
40 that suggests this language may be not particularly appropriate,
41 but the way it had been written was that there is no assessment,
42 but the stock is unlikely to suffer overfishing if future
43 landings remain similar, and that would be Tier 3a. In that
44 case, the OFL is the mean of the recent landings plus two
45 standard deviations, and the ABC is the mean of recent landings
46 plus one standard deviation, is the general practice.

47
48 Tier 3b is when you have no assessment, but the SSC feels the

1 stock is likely to suffer overfishing, and, in that case, the
2 OFL is the mean of the recent landings, and the ABC is buffered
3 downwards, and the default value, I believe is 75 percent,
4 although we have chosen different values at different times.

5
6 Points here are Tier 2 is where all of our data-limited stock
7 assessments would belong, but currently, as written, it doesn't
8 function well, and so lots of details, but, in general, the ABC
9 control rule needs to read as if it's this condition, do that.
10 Otherwise, do something else. That's basically what an ABC
11 control rule is.

12
13 The calculation of both MSY and OFL depends on knowing or
14 assuming the nature of reproduction, growth, and natural
15 mortality, and so, in many cases, we have insufficient data to
16 give you reliable estimates of OFL, and so we require using a
17 proxy in those cases, and we've had a lot of discussion about
18 proxies. The Science Center's basic position remains that the
19 range of proxies could be specified, the lower bound at that
20 global SPR calculation and the upper bound at the advice
21 provided by the Harford et al. paper. Alternatively, one could
22 envision using a Bayesian prior for steepness and generating
23 that range from the stock assessment itself.

24
25 I think Rick showed you this, but definitions for MFMT vary
26 across the U.S., and so lots of different proxies are used, and
27 there are also differences in the application among councils,
28 and, if you want to just look at SPR references, the councils,
29 the various councils, use a variety, ranging from F 20 percent
30 all the way to F 50 percent, and we typically use mostly F 30 in
31 the Gulf of Mexico.

32
33 Now back to how we would better characterize the scientific
34 uncertainty, and so, moving past our tiers and dimensions table,
35 how would we better calculate that buffer between OFL and ABC?

36
37 One could try to estimate the variance of the PDF as part of the
38 assessment process, and one also could try to estimate the
39 variance external to the assessment process, and so, if you felt
40 that the PDF that comes out of the stock assessment was
41 unacceptably narrow, and that happens frequently in our
42 assessments, because of the number of fixed parameters we're
43 using, and so we typically fix natural mortality.

44
45 We often fix retention functions, and we fix some elements of
46 selectivity patterns, et cetera, et cetera, and so we're not
47 fully representing the known scientific uncertainty within the
48 stock assessment, and the PDFs that come out of the stock

1 assessment are often narrower than is desirable or than we
2 believe quantifies scientific uncertainty.

3
4 You could estimate the variance external to the stock assessment
5 process by borrowing it from another assessment or from
6 computing it from comparisons of many past assessments, as
7 Ralston et al. did, and I included, in the background
8 documentation of this meeting, that Ralston document, or you
9 could not try to even -- I just wanted to clarify that this
10 means -- What was intended by this bullet point is you could not
11 even try to estimate the buffer between OFL and ABC, and you
12 could just set it to say $F_{ABC} = 0.75 F_{MFMT}$,
13 or F_{FMSY} or its proxy, and we have done that in certain cases
14 here as well. You could just use a hardcore buffer.

15
16 What do we believe you should do with your ABC control rule?
17 Tier 1 we believe should consider reducing fishing mortality, or
18 MFMT, as the stock size declines in the ABC control rule, and we
19 recommend that you have additional tiers that are made more
20 flexible to accommodate assessments that are more data limited
21 in nature.

22
23 We recommend actually two additional tiers, one for data-
24 moderate assessments and one for data-limited assessments, where
25 data-moderate assessments would have more uncertainty than data-
26 rich, but less uncertainty than data-limited, if you know what I
27 mean.

28
29 Bullet Point 3, that might be more of a personal opinion, but
30 we, when we recommended this to the Caribbean Council, it was
31 certainly our concept that the council should determine the
32 acceptable probability of overfishing and that the SSC should
33 focus on determining the magnitude of scientific uncertainty.

34
35 I should probably -- This is the strawman proposal that we
36 walked in the door with for the Caribbean ABC control rule, and
37 they did modify it somewhat, and I have not included those
38 modifications. I have left this the original control rule that
39 we proposed prior to the SSC's changes, for the Caribbean SSC's
40 changes.

41
42 Tier 1 is a data-rich assessment tier, and we've essentially
43 already gone over this tier, but the important points to
44 highlight here is that your ABC buffer now, rather than using
45 the tiers and dimensions table, you would essentially establish
46 an acceptable -- You would establish, essentially, the sigma,
47 the uncertainty, the scientific uncertainty, either from the
48 assessment itself or from borrowing from the Ralston approach.

1 You would establish what you believe is the variance, the sigma,
2 that you're going to accept for this assessment.

3
4 **CHAIRMAN POWERS:** A clarification. That's the reference C min,
5 that there is some minimum acceptable standard and that
6 everything is scaled to that.

7
8 **DR. CALAY:** Exactly. Thank you for clarifying, and so that's
9 kind of what this hinges on, is that you first establish what
10 your minimum acceptable variation is in the shape of the PDF,
11 the sigma.

12
13 This is the Ralston approach, and this is one of the figures
14 from the Ralston approach, and it shows three tiers of stock
15 assessments here, and, essentially, there is three levels of
16 sigma, and the sigma on the top represents your data-rich
17 assessments, and that sigma is 0.36, and so it shows you that
18 the council, in this case, might determine the acceptable
19 probability of overfishing, which is your X-axis, ranging from
20 50 percent all the way down, in this case, to 25, and then it
21 shows you, at that sigma level, what would be the corresponding
22 ratio between ABC and OFL.

23
24 You will see that, at 50 percent, OFL is always equal to ABC, no
25 matter what your sigma is, but, as your probability of
26 overfishing declines to 25 percent, in your data-rich condition,
27 with a sigma of 0.36, your ABC is 80 percent of your OFL at a 25
28 percent risk of overfishing.

29
30 For Tier 2, your data-moderate tier, perhaps, that sigma is
31 0.72, and so, at a 25 percent probability of overfishing, your
32 ABC is 60 percent of your OFL, and, for your data-limited tier,
33 at a 25 percent overfishing, your ABC is 40 percent of OFL, and
34 so that's how this works. These were determined from looking at
35 many, many realizations of their most common stock assessments,
36 and these are kind of their general conclusions. Doug.

37
38 **MR. GREGORY:** The criticism I have heard frequently about the
39 way we've been doing things, and it's primarily Tier 1, is that
40 ABC is only about 10 percent less than OFL, and the Ralston
41 paper has been referred to a lot of times, but, if you look at
42 the Ralston paper, and you look at 0.38 or 0.4 in the Tier 1
43 category, their ABC is only 10 percent less than OFL, and so
44 it's no different than what we've been doing, and so I don't
45 understand the criticism of what we've been doing, other than
46 the other tiers. Their other tiers are much more conservative
47 than our Tier 2 or Tier 3, but, as far as Tier 1 goes, it's
48 basically what we're doing. It's the same thing.

1
2 To try to get beyond this criticism of a 10 percent difference
3 in ABC, what I want to start looking at is not that, which we
4 don't know what that really means, but look at, okay, let's say
5 OFL is 30 percent SPR, where MFMT is, and an ABC is 10 percent
6 less than that, and what SPR is that? Is it 31 percent, or is
7 it 35 percent?

8
9 That is when we will get some insight as to whether or not the
10 buffer is too big or too little, and, in a rebuilding schedule,
11 like with red snapper and some other fish, when are we projected
12 to recover the population with an ABC, as opposed to the OFL,
13 because, if we're projected to recover the population four or
14 five years sooner than we would with an OFL, that 10 percent
15 buffer really has a significant impact, and I think we've been
16 focusing on the wrong thing and criticizing the buffer itself,
17 because it's no different than what they use on the Pacific
18 Council. Thank you.

19
20 **CHAIRMAN POWERS:** I think this is a really relevant discussion,
21 but I want to finish the presentation first, before we get into
22 all of this. I think some of the reticence on both Shannon and
23 my part about this more relates to the other tiers as well, as
24 you say, and it's the inconsistency of how we're interpreting
25 uncertainty for different tiers, and I think what this is trying
26 to do is, like I said, put it all on the same scale, but, if you
27 don't mind, Doug, can we go ahead with the presentation?

28
29 **MR. GREGORY:** Sorry. I've been chomping at the bit for months.

30
31 **DR. CALAY:** Well, I'm glad that the presentation is generating
32 discussion, because that was the point. All right. This is
33 probably an unnecessary level of detail, but this is essentially
34 a North Pacific philosophy of a 40:10 control rule and how it
35 would function, but let's skip this for the time being.

36
37 **CHAIRMAN POWERS:** This one took me a little bit. Basically, the
38 Y-axis is now actually in catch, rather than normally we look at
39 it in terms of fishing mortality rate, and so it gets
40 translated, but it's essentially the same kind of thing.

41
42 **DR. CALAY:** Okay, and so data moderate, in your Tier 2 now for
43 data moderate, this would be for stock assessments where at
44 least two of three time series, either catch data, age, or size
45 composition, and indices of abundance are deemed informative and
46 useful, and that would be what we consider a data-moderate
47 assessment, but only two of those three, and you can still
48 provide estimates of MSST, MFMT, and a PDF on OFL, and so, in

1 these cases, for a Tier 2 assessment, where one of these three
2 types of data might be considered unreliable.

3
4 We would propose to use the same elements as the Tier 1, but now
5 we increase the variation of the PDF on OFL, and so, instead of
6 that sigma minimum that we established in Tier 1, we would
7 propose to use something greater, say 1.5 times sigma minimum,
8 because, in principle, there should be more uncertainty for a
9 data-moderate approach than for a data-rich approach, and,
10 currently, we don't fully consider that in our tiers and
11 dimensions table.

12
13 Data-limited stock assessments, we would use this tier for
14 either relatively -- For out-of-date assessments, if we were
15 trying to use an out-of-date assessment to establish management
16 advice or for data-limited stock assessments, and, in this case,
17 you might have only one, either catch, size composition data, or
18 an index that you consider reliable, and the other two pieces of
19 information are data-limited or highly uncertain.

20
21 In this case, we would still be able to give you a definition
22 for MFMT, and it might be that the definition is that MFMT is
23 FMSY, or its proxy, and the MSST is unknown, and the OFL is
24 still your catch at MFMT, and, in this case, the ABC, we would
25 increase again that sigma, and we would propose to use something
26 like on the order of two-times your minimum sigma for OFL, and
27 an ABC would be a scalar that reduces OFL, and the scalar must
28 be less than 0.9, just as a generic rule. It could be
29 considerably less than 0.9, but it certainly shouldn't be equal
30 to the OFL.

31
32 In Tier 4, this is basically -- There is a change here, and the
33 change is basically in standard deviations. I mean, we're
34 basically saying the OFL is the median with two standard
35 deviations above the mean, and the problem with that is in
36 uncertain -- In highly-variable catch series, sometimes that two
37 standard deviations above is very, very high, and it's a value
38 higher than we've ever observed.

39
40 In some of our preliminary analyses, using the 75th percentile
41 actually functions better than using two standard deviations
42 above the mean, and so it still gives you that buffer you're
43 looking for, where your OFL is still higher than the mean
44 landings for Tier 4a, which is where you're not concerned, and
45 you think the catches are sustainable and that you're just
46 trying to prevent unnecessary management of that stock, and so
47 our recommendation here is to avoid using two standard
48 deviations above the mean, simply because it can produce some

1 outcomes that are far above any observed value.

2
3 However, in practice since, in the Caribbean, we have also noted
4 that the 75th percentile can still do that to you, and so it may
5 not be the panacea that we hoped for, and so that's the change
6 here. Other than that, basically, you're still using catch only
7 information for Tier 4. Our advice is just to avoid setting OFL
8 higher than any observed historic landing in Tier 4a. That's
9 the main advice from this slide. That's the end of that
10 presentation, and so that's kind of our strawman proposal and/or
11 advice to the SSC about ways to improve the control rule.

12
13 **CHAIRMAN POWERS:** Thank you. Keeping in mind Doug's comments,
14 Will, you wanted to --

15
16 **DR. PATTERSON:** Thanks, Shannon, for running through the advice
17 to the Caribbean, and I guess they have adopted some edited
18 version of this, and we talked quite a bit about the Ralston et
19 al. approach a couple of years after it was first published, and
20 one of the things that we talked about is that it's an attempt
21 to try to come up with an objective way to set buffers, but it's
22 based on analysis of modeling error in west coast assessments,
23 and, even in that paper, they acknowledge that process error and
24 measurement error and other sources of error are not actually
25 part of what they have captured in their sigma.

26
27 Instead, it's an estimate of model error, and so, to borrow it,
28 I think it would give us this patina of an objective approach of
29 science to decrease the OFL to ABC based on this amorphous
30 scientific uncertainty, but it's not actually objective at all.
31 It's just as subjective as if we had created our estimate based
32 on model error in Gulf assessments, and perhaps that would be
33 more defensible, and there was some discussion about trying to
34 do that.

35
36 We keep inventing ways to try to inject objectivity into this
37 process that I think is inherently flawed, because we don't have
38 a true target, and we've talked about this before. You have a
39 threshold that's estimated in the OFL and then a buffer and a
40 buffer, and so that gets us into this conundrum of data-poor
41 stocks and plus or minus two standard deviations and where does
42 that put us, and is that actually where we want to be? Is that
43 helping us achieve OY?

44
45 Nobody really knows that, but, if we took a clearly objective
46 approach, which I have advocated for in the past, of having OFL
47 be the yield at MFMT or FMSY, and have a true target, an ACT,
48 which is set at F 75 percent, or 75 percent of FMSY, and so

1 that's the SFA model, but now, with the reauthorized act, there
2 is no true target mentioned, but ACT does come up in the
3 guidance, but the real strong suit of the revised act is the
4 accountability measures, which didn't exist before.

5
6 You have ABC and ACL, which can be equal, and, in the approach
7 that I have advocated, if you have the OFL estimated from an
8 assessment or a catch series or something in between, a highly-
9 quantitative assessment versus just a catch series, then you can
10 have a sliding scale, based on what you view as scientific
11 uncertainty, and perhaps even regulatory or management
12 uncertainty.

13
14 If you have a very quantitative assessment, maybe you set the
15 ABC equal to ACL at the 75th percentile of that range, and so
16 let's just say, in a given fishery, your estimate of the OFL is
17 a million pounds, and the 75 percent of FMSY applied to the same
18 biomass gets you 900,000 pounds, and so you have 100,000 pounds
19 difference between the two.

20
21 If you set the ABC equal to ACL at the 75th percentile, then that
22 would be a reduction of only 25,000 pounds from the OFL, and so,
23 if you felt really strong about the management process and the
24 assessment, then you would allow the fishery to catch up to that
25 level before accountability kicked in.

26
27 You would set your management in a given year so that you tried
28 to achieve the target, but if, for whatever reason, you had a
29 spike in landings in the recreational fishery, or something went
30 catawampus in the commercial fishery for a given stock, and you
31 ended up with higher catches, there wouldn't be any payback
32 provisions, because you had a really quantitative assessment,
33 and you didn't actually overfish, right, and we're trying to
34 prevent overfishing, but you have a true target, and you set
35 that as the ACT.

36
37 Then, to get to the other extreme, if you had an OFL based on a
38 catch time series that you didn't have much confidence in, then
39 maybe you take the 25th percentile of that range, and so you have
40 a bigger buffer between the OFL and where the ACL is, which is
41 where accountability kicks in, and so you keep yourself away
42 from the OFL, because you have less confidence about where that
43 actually is or your ability to constrain a fishery to that
44 level. It gets away from all of this subjectivity, which has
45 the feel of being an objective, scientific approach, but it's
46 not really.

47
48 **CHAIRMAN POWERS:** Thank you. Luiz.

1
2 **DR. BARBIERI:** Thank you, Mr. Chairman. I understand Will's
3 points, and I think that this is a valid approach to deal with
4 this. However, we have a system in place that has been
5 established and all the councils have accepted, and so they have
6 implemented it through primarily NS 1, and so that system is in
7 place, and we are -- We have an ABC control rule, and we operate
8 in the parameters of what is in I guess Slide Number 2 or 3 in
9 her presentation.

10
11 We function along those things, and councils, I guess, would
12 have the flexibility within that framework to utilize parts of
13 that in whatever way they want to manage the stocks, but, in
14 this case here, as the SSC, we haven't received that guidance
15 from our council explicitly, to say, no we want to function,
16 right or wrong, advisable or not, but we haven't received that
17 guidance from our council, in terms of we're going to be
18 managing by ACT and then avoid having to explicitly establish
19 any of these other metrics.

20
21 Within this, our ABC control rule is trying to address that
22 we're going to have to establish an OFL, and, from there, we'll
23 set up a way to come up with ABC.

24
25 If we go to Slide 25, I agree with Shannon's points that
26 modifying the way that we handle things so far -- I think that
27 our ABC control rule is a little bit overcomplicated, and the
28 issues of risk and uncertainty are somewhat conflated there, and
29 it would be -- Her Point Number 3 there, I agree completely.

30
31 I was just looking, since Rick is in the room, I was just
32 looking at a presentation that he gave at the 2nd National SSC
33 Workshop, and this was back in 2009, and I sent that to some of
34 you, and it was Slide 14 of how to deal with unmeasured
35 uncertainty, and so, as we were working through it back then,
36 the process of how we're going to implement NS 1, and P* was one
37 methodology that came forward that was promising, and it was
38 something that we wanted to potentially implement, we already
39 knew that there would be situations where we're not going to be
40 able to really measure all of the uncertainty and be able to
41 express that in the way that we estimate ABC, or specify ABC.

42
43 In that slide, he recommends options if uncertainty is clearly
44 underestimated. One, decrease P*, which is an option, but, in
45 this case, it's not necessarily the option we want to go with.
46 Add proxy variants for the unmeasured component or add
47 additional buffer, and so, to some extent, to me, this is
48 somewhat similar to the Ralston et al. approach in Slide 27,

1 where they are adding sigma.

2
3 If the council sets up P^* and determines that they feel
4 comfortable with, in terms of probability of overfishing, and we
5 adjust the PDF to be flatter or somewhat more representative of
6 what we believe would be the level of uncertainty that would be
7 more realistic, then it's just a matter of applying that P^* to
8 that PDF and we come up with something.

9
10 I just wonder whether this somewhat simplistic approach, in a
11 way, and I recognize the patina of objectivity, but it's
12 somewhat simplistic, but aren't we sometimes kind of
13 overcomplicating things? We come up with a PDF, and perhaps, if
14 we feel that, for whatever reason, and Shannon brought up some
15 criteria there for how we would look at the PDF and evaluate it,
16 do we think that this is capturing all the uncertainty, or most,
17 or a big portion of the uncertainty?

18
19 If not, we come up with some, and they make some recommendations
20 there in that paper, some methodology for adding sigma to the
21 distribution and go with that, and I think that that is
22 simplistic, but it's more transparent for what you're doing, and
23 you're acknowledging that you can't really capture all of the
24 uncertainty, and you are having to add more, and it separates
25 that confounding of P^* and the PDF, in terms of risk of
26 overfishing versus uncertainty, and I think it clarifies the
27 process altogether, and that would be my recommendation, that we
28 go with something similar to Ralston et al., if not --

29
30 **CHAIRMAN POWERS:** My interpretation, what I saw, in the strength
31 of this sort of thing is basically to put things on a scale
32 where, as a scientist, you kind of understand that the sigma
33 goes up and the sigma goes down, but it can't go down below C
34 min, and, yes, that is sort of an arbitrary thing, and it's
35 based on, as you said, the west coast, but it's setting a
36 minimum.

37
38 I am not sure what Will suggested, because he did it verbally,
39 and I like to see writing, but I'm not sure that you couldn't
40 translate that into exactly what Will suggested, or even what
41 Doug said, that it ought to be characterized in terms of SPR,
42 and I think it could be translated back into that.

43
44 I am not sure we're really talking about different things here,
45 but it's just that this is, in my thinking about it -- One of
46 the major criticisms was having tiers that resulted in
47 expressions of uncertainty that were inconsistent with each
48 other, but, again, let me open it up. Doug.

1
2 **MR. GREGORY:** I found this from the council, and the council has
3 given us guidance, back in 2009, at least in the committee
4 report to the council, and I assume it passed the council and
5 came to us, and the Sustainable Fisheries Committee recommends,
6 and I so move, to bracket the acceptable levels of risk that ABC
7 exceeds true -- It shouldn't say exceeds, but at 15 to 45
8 percent, and so we were given that range to work within, and I
9 think that's what the table is probably based on, the elegant
10 table that Shannon and Joe developed that I wouldn't want to
11 discard completely.

12
13 The truth of the matter is that we've been dealing with this and
14 going around in circles since the beginning, and the problem is
15 the National Standard Guidelines. Having scientists make
16 decisions based on what they don't know, their uncertainty, is
17 ludicrous, and that's why we're having so much difficulty with
18 this.

19
20 The end result is -- Well, I don't know what the end result is,
21 but we don't know what the uncertainty is, and there is no way
22 to capture it. I mean, we all have worked on the ocean. The
23 first principles are it's extremely uncertain. Unless you're
24 doing it day in and day out, like commercial fishermen do, you
25 don't really get much insight into the dynamics of it all, and
26 so we do the best we can, and, in the beginning, I thought that
27 if we -- We usually do different scenarios for stock
28 assessments.

29
30 If we had a way of combining and developing joint PDFs of those
31 different scenarios, we would get the full range of the PDF, but
32 apparently that's too difficult to do, or it's not as easy --

33
34 **UNIDENTIFIED:** It's not easy, but it's feasible.

35
36 **MR. GREGORY:** But we seem to have not been doing that lately,
37 and part of it is our scenarios are just kind of guesses that
38 border around the base model anyway, but I think we either punt
39 and do something simpler, like was recommended in an earlier
40 slide, or we get more sophisticated and more complicated and
41 trying to get as much uncertainty built into our decision-making
42 as possible, but, to me, it's a fool's errand.

43
44 I go back towards simplicity, and I think the 75 percent of FMSY
45 or whatever is a good start, but, again, we don't know what the
46 impact of that is, and it certainly is not 25 percent difference
47 in catch, and it depends on if you're doing a static SPR or
48 doing something more dynamic, but it is more straightforward,

1 and we've done it in the past.

2
3 We saw a table, with a previous discussion, where we've done it
4 for five or six different species, but we refused to do it
5 yesterday for other species, and so I would say, one, what we've
6 got is working fairly well, I think as good as anybody's, and,
7 if we do change it, let's try to simplify it, and, if we get
8 more conservative with the other tiers, so be it, but it's
9 straightforward, and it's all -- The Ralston process has a
10 consistent foundation for all the tiers, where we've developed
11 different foundations and different methodologies, but that's my
12 two-cents worth.

13

14 **CHAIRMAN POWERS:** Thank you. I have Will and then Lee.

15

16 **DR. PATTERSON:** Luiz mentioned that the simplistic approach that
17 I advocated for is a departure from what this council has been
18 doing with the SSC. However, it's not that different than what
19 the North Pacific does with the 40:10, and it's just that,
20 there, you have a sliding scale based on where you perceive the
21 stock biomass to be.

22

23 I remember having a conversation with Rick, at one of the very
24 first National SSC Meetings, when I was confused that these
25 different regions seem to be interpreting this differently, and
26 I said, well, how can that be? How can all of these be equally
27 viable? He said, no, they are, and he explained to me how they
28 all have the same general concept, but it's just that,
29 regionally, there were differences among fisheries and among
30 cultures, and there was room for interpretation, and so I don't
31 think it's impossible to do what I'm advocating.

32

33 The second thing is, with all of the P* approaches, we get -- We
34 focus for a long time on the probability, where we are on the
35 distribution, and that's where all of our energy went, and then
36 we figured out, well, if you have a very narrow distribution, it
37 doesn't really matter what P* is, because you're not going to
38 have that much of a buffer.

39

40 Now we're trying to impose this, to broaden out the PDF, but,
41 again, we're borrowing information from another region that
42 actually was computed with only a small portion, or maybe not a
43 small portion, but only a portion of the uncertainty or the
44 error that goes into the estimate of OFL.

45

46 Lastly, I just think this whole concept, as I've thought more
47 about it, about P* and buffering from OFL, it goes against the
48 principles of parsimony, because we're focused on precision,

1 and, as you increase the parameters in a model, you tend to get
2 a more accurate estimate, but a less precise one, yet what we're
3 suggesting here is the opposite.

4
5 We have 1,100 parameters in the red snapper model, and, because
6 we fix some very basic parameters, and we can come out with a
7 very narrow PDF, we then have to impose a distribution from
8 somewhere else in order to broaden it out, and that doesn't seem
9 objective to me, and then, on the contrary, if we have an OFL
10 estimated just from landings, then we have a different buffer,
11 when it's actually very precise. It may not be accurate, as a
12 reflection of OFL, but it doesn't have much variance around it.
13 Anyway, it just seems, to me, contrary to parsimony.

14
15 **DR. ANDERSON:** First, I have a question, and, when I ask my
16 question, that isn't the end, and I'm announcing it now, so you
17 don't go on. I'm asking a question of the group, and I have
18 asked this question before, and I saw in the presentations, and
19 I heard about it, that we need the PDF of the OFL.

20
21 I have heard another, and I've asked this question, of do you
22 get a legitimate PDF of OFL out of stock assessments, and I
23 heard one thing of, well, because we don't have much variability
24 in the thing, it comes out narrow, and I've heard other answers
25 that, no, we can't even get a PDF of OFL, and it comes out as --
26 You get a point estimate, and so, in one way, we're -- Are we
27 asking the impossible? Can we get a decent PDF of OFL? Then I
28 have more to say, but I would like to have somebody answer that.

29
30 **DR. CALAY:** I think, in all of the stock assessments that we
31 have developed, it is possible to generate a PDF on OFL.
32 Whether you believe that fully represents the scientific
33 uncertainty is debatable, because we use -- In most cases in the
34 Gulf stock assessments, some of the important leading parameters
35 are fixed.

36
37 If we actually put a prior on them and estimated, the PDF would
38 be broader, but the stock assessment might not converge, and so
39 there are reasons that we do it, but the PDFs that we're
40 generating are likely to be narrower than the reality.

41
42 **DR. ANDERSON:** The P* mode of operation has a very weak link, in
43 that the PDFs may not be that strong, and now, if I may, Mr.
44 Chairman, I want to go a little further into this, and I have
45 mentioned this before. In fact, once, when we had our meeting
46 in Key West, I gave a full presentation on the benefits and
47 costs of this.

1 As an economist, I get a little worried that we talk about only
2 the costs, and we need to lower the risk of fishing, and so
3 we're going to cut this back, but what are we giving up, and I
4 will say one thing, and that's why I like this Ralston approach,
5 is that, when you're making choices, you get some kind of notion
6 of the cost.

7
8 The thing is that ABC over OFL. If you just have that hockey
9 stick thing, and we've got the stock here, and then the
10 probability of overfishing, and you say which one looks good, or
11 let's add -- Let's double the uncertainty parameters in the
12 thing, and you don't know what that -- Is that a good thing? It
13 sounds good, that we're being more safe, but we don't know what
14 we're getting in return.

15
16 Somehow, I would like to see these discussions turn on what are
17 we giving up and what are we gaining. Doug, your point about
18 adding in the time to rebuild in there, that would be another
19 thing that we could look at. We could say, all right, we are
20 giving up 10 percent of our catch, or 40 percent of our catch,
21 but the expected time to rebuild is going down by a certain
22 amount, and at least we would have some kind of a tradeoff to
23 get into.

24
25 I know that I am kind of changing the tone of the argument, and
26 I hesitate to say it, but, within reason, I am willing to work
27 on a group to try to come up with something that we could
28 respond to this, but I think some kind of a hockey stock with
29 some notion of where you are looking at both what happens to the
30 probability of overfishing and you are comparing it with at
31 least something that has to do with what you're possibly
32 gaining, either time to rebuild or a percent of the actual
33 harvest that you're losing, and I think we can get a better feel
34 for it, and, more importantly, we can give the council a better
35 feel for what their choice -- They should make these choices
36 ahead of time, so that it's not biased.

37
38 **CHAIRMAN POWERS:** Thank you. Bob.

39
40 **MR. GILL:** Thank you, Mr. Chairman. It seems to me that we, as
41 has been discussed, we have talked and talked about this
42 problem, and we're not going to solve it right here, and so I
43 would propose that we reestablish the ABC Rule Working Group to
44 take where we are and come back with a proposal for where we
45 should go.

46
47 **CHAIRMAN POWERS:** Thank you. I assume that's in the form of a
48 motion.

1
2 **MR. GILL:** I so move.
3
4 **CHAIRMAN POWERS:** Is there a second?
5
6 **DR. ANDERSON:** Second.
7
8 **CHAIRMAN POWERS:** Okay. Can you repeat that for Charlotte a
9 little bit?
10
11 **MR. GILL:** That an ABC Rule Working Group be reconvened to
12 evaluate the existing ABC control rule and propose improvements.
13
14 **CHAIRMAN POWERS:** Okay. Is there discussion? Again, in my
15 opinion, what we're grappling with here is different ways of
16 expressing the same thing and that what Lee suggests is that you
17 look at those hockey sticks and it doesn't mean anything from
18 evaluating costs and benefits and that sort of thing. I think
19 it could, and so we have to be very careful about who we're
20 communicating with and what we're trying to express.
21
22 To me, I look at the hockey sticks, and I know exactly where the
23 flexibility is, or should be, and where the arguments ought to
24 be, and Doug looked at it differently, and he wants to look at
25 it in terms of you can translate those into SPRs and that sort
26 of thing, and so there's a tradeoff there, and so I would -- The
27 reason I'm bringing this up is I think that a working group like
28 this ought to think about who it is that you're trying to
29 communicate with and what's the best way to do that
30 communication.
31
32 **DR. BARBIERI:** What I was going to say is, as a beginning for
33 this, I see two options already on the table. One is the
34 suggestion that Will made, that we set ABC, in a way, actual ABC
35 equal to ACT, and we have a bigger --
36
37 **MR. GILL:** That's not what he said.
38
39 **DR. BARBIERI:** No? So can you explain what your proposal is,
40 Will?
41
42 **DR. PATTERSON:** I think the problem is that we're all trying to
43 find different ways to grab air and feel good about it, because
44 uncertainty is out here, and we can't quite grasp how to do it,
45 and everybody feels differently about it, and I think the issue
46 here is that there's no true target.
47
48 What my approach does is say, okay, OFL is the threshold, and

1 the ACT is the targets, the annualized realization of OY, given
2 no other objective way to establish what OY is, and we say
3 that's the annualized realization of OY, and so that's our
4 target. It gives you something to actually achieve.

5
6 You want to stay away from overfishing, and you want the stock
7 to be above BMSY, and so you reduce the effect of the natural
8 fluctuations, the process error in the environment, and you
9 leave the stock in a less vulnerable condition.

10
11 Then, to buffer away from OFL, you base that upon scientific and
12 management uncertainty that are coupled, and so, if you have a
13 heavily-regulated fishery for which you have really great catch
14 data, and you know a lot of information, and you have a very
15 quantitative assessment that you feel is relatively unbiased,
16 then you have a lower buffer.

17
18 If you are basing your OFL and ACT based on just a catch time
19 series, then maybe you have a wider buffer that's closer to the
20 ACT that says, if you go across the ACT a little bit, then
21 there's accountability. That way, it actually gives you a
22 target, something to achieve.

23
24 One thing we have never done is -- In the amendment that we went
25 through yesterday, the council has OY definitions on the books
26 from SFA for a lot of these stocks, and that's where the 75
27 percent MSY and the yield at 75 percent MSY came from, and so
28 there is an OY definition, and we've never actually looked to
29 see, given all of our buffering to avoid overfishing, how well
30 did we approach the OY.

31
32 We know the stock, because we're not overfishing, that the stock
33 biomass trajectories should be heading above BMSY, but we don't
34 know how close they are getting to BOY, or whether they would
35 ever get there, but, in this approach, we would have a true
36 target, and we don't have to grasp for this hard to quantify or
37 estimate uncertainty, which by its very nature is amorphous,
38 but, instead, we have a true target, and then we allow the
39 uncertainty to be in between two defined parameters.

40
41 **CHAIRMAN POWERS:** Thank you. Were this motion to pass, I would
42 ask for volunteers and give a few days to volunteer, and, after
43 that, I will make assignments. Bob.

44
45 **MR. GILL:** To that point, Mr. Chairman, I would recommend that
46 we request the council provide a representative to be on that
47 working group, since, ultimately, this is their control rule,
48 and being involved in that process, albeit it might be torture

1 for whoever that representative is, but it would be helpful, in
2 terms of that communication as to their view of the impact of
3 what we might be considering.

4
5 **CHAIRMAN POWERS:** Yes. Thank you. That's a good idea, and,
6 also, we would need a NMFS representative, Shannon. Doug, go
7 ahead.

8
9 **MR. GREGORY:** I would just point out that, the last time we did
10 this, the full SSC changed everything that the working group
11 presented, every time, and so I don't know how to get out of
12 that conundrum, but it just didn't work, and we ended up having
13 multiple meetings and rehashing everything, just like we do
14 here.

15
16 **CHAIRMAN POWERS:** My expectation is that the working group will
17 be the people that are most vocal today, and, secondly, I would
18 also presume that the functioning of this working group would be
19 by communication email, et cetera, not having individual
20 meetings, unless we're more developed in terms of that sort of
21 thing, and it's unlikely, at this point, to have a separate
22 meeting, and is that sort of your interpretation?

23
24 **DR. ANDERSON:** I would like to have it not be ruled out, but, in
25 general, yes, webinars and things like that.

26
27 **CHAIRMAN POWERS:** Okay. This isn't part of the motion or
28 anything, but I was just thinking operationally and
29 recommendations for that. Doug.

30
31 **MR. GREGORY:** I understand where Will is coming from, because,
32 when the 2006 reauthorization occurred, and OY was emphasized as
33 the thing to do, part of that was because the Gulf Council,
34 prior to 1996, always interpreted OY as to be more fishing than
35 MSY, and the way they looked at it was, well, the social and
36 economic ramifications of reducing catches are so great on the
37 fishermen that we won't reduce the catches so much, and so it's
38 just the opposite of the professional definition of OY.

39
40 I think that was part of the reason for the 1996, and I
41 remember, as one of the stock assessment chairs, coming to the
42 council and saying, listen, guys, you had better listen up, and
43 we're not talking about MSY anymore, and we're talking about
44 going more conservative than MSY, but NMFS never really enforced
45 that.

46
47 When the 2006 reauthorization came up, I was just going, great,
48 they're going to fix the 1996, and they're going to make ABC

1 equal to OY, and that's going to come from the scientists, and
2 so the council cannot exceed that, and so not only did they
3 change the whole interpretation of the Gulf Council's idea of
4 what OY was, but, in my mind, it was going to make OY more
5 conservative than MSY, and that would be ABC, but, low and
6 behold, no, that didn't happen. We got ACTs and ACLs and all
7 this other stuff, and OY is still out there hanging in limbo.

8
9 If we can get back to what Will -- Will and I and our
10 interpretations, if we can get to that, that would be great, and
11 I would just say that maybe OY should be ABC and not ACT, but we
12 can discuss that later.

13
14 **CHAIRMAN POWERS:** Thank you. Carrie, some final guidance?

15
16 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chairman. I was
17 just going to mention that I think this has to be an open public
18 meeting, and we'll have to notice it in the FRN and all those
19 kinds of things, and so it can be via webinar, but it's not
20 going to be like an IPT, where it's just emails or something
21 like that. It would have to be an open public meeting.

22
23 **CHAIRMAN POWERS:** The question here was why?

24
25 **EXECUTIVE DIRECTOR SIMMONS:** You've got council members
26 involved, and you've got SSC members involved, and it will have
27 to be an open public meeting.

28
29 **CHAIRMAN POWERS:** Does that include general emails and that sort
30 of thing?

31
32 **EXECUTIVE DIRECTOR SIMMONS:** I am not a lawyer, but this is not
33 just staff, and so I suspect it's going to have to be -- Ryan
34 thinks differently, but I think this is -- If you get a council
35 member involved, and we're paying for stipends, potentially, for
36 the SSC members that are involved in this, it's going to have an
37 open public meeting.

38
39 **MR. RINDONE:** If email -- I am just thinking about how SEDAR
40 operates, and I am not trying to argue. If anything, it's for
41 clarification. Like how we're doing some of the interim stuff
42 and some of the portions of the operational assessments, where
43 emails can be exchanged at will between participating members,
44 but, ultimately, any decision that's made on the subject
45 material is still made in an open, publicly-noticed forum, like
46 a webinar, and so they may be able to prepare materials and what
47 things need to be decided via email communications, but nothing
48 is finalized via email. It's still all openly discussed and

1 subject to change at that publicly-noticed webinar, and would
2 that be satisfactory?

3
4 **CHAIRMAN POWERS:** At this point, I think let's leave that to
5 discuss later, and it's an issue, but we're not really prepared,
6 as an SSC anyway, to say yea or nay. The principle we're trying
7 to get across here is that we want to have this working group
8 that puts together some materials that the SSC can consider, and
9 that's more or less it. Carrie and then Doug.

10
11 **EXECUTIVE DIRECTOR SIMMONS:** I think it's a good idea. I think
12 we just work out the logistics and make sure we're doing the
13 right thing. Thank you.

14
15 **DR. ANDERSON:** If I can say one other thing. Not only council
16 members, but I think we should have staff, like Ryan or John or
17 somebody, there, so that --They know how this stuff is
18 implemented, and it would be better if we had them onboard.

19
20 **CHAIRMAN POWERS:** All right. If there are no other comments --
21 Doug.

22
23 **MR. GREGORY:** If you look at Slide 24 of what Shannon presented,
24 there is the recommendation that Will has been talking about, F
25 of ABC equals 0.75 MFMT. That is a suggestion that, if we don't
26 like the complicating factor of PDFs and trying to combine joint
27 PDFs, that's another approach for us to take, and so it's on the
28 table.

29
30 **CHAIRMAN POWERS:** This is the details that the working group
31 should deal with, and I guess people are advocating positions
32 that I think ought to be dealt with in this working group.
33 Will.

34
35 **DR. PATTERSON:** Just a quick statement here. That's actually
36 not what I am advocating. The ACT would be set at that level
37 and not the ABC. The ABC and ACL would be in between the OFL
38 and ACT. That is what I am advocating.

39
40 **CHAIRMAN POWERS:** All right. The motion that was on the table
41 is to basically create this working group, with the idea of
42 putting together information that would be useful to the SSC to
43 consider at subsequent meetings. Lee.

44
45 **DR. ANDERSON:** Ken just whispered in my ear that it would be
46 important -- What kind of time period are we working on this, to
47 make it relevant?

48

1 **CHAIRMAN POWERS:** Our next meeting is in September, and I find
2 that probably unrealistic to get much ahead of that.

3
4 **DR. ANDERSON:** Maybe at the September meeting the committee
5 members could come in a day early or two, and it won't cost any
6 more airfare.

7
8 **CHAIRMAN POWERS:** I am going to leave all that to the committee
9 themselves, in terms of how that gets operationally developed,
10 and it's like the Constitution saying that Congress can develop
11 their own rules, basically. We'll leave it at that, but you've
12 heard some guidance here, and there is operational issues that
13 have to be concerned between Ryan and from the staff level and
14 Shannon from the NMFS level and the council level, and all these
15 things have to be considered, but I would -- Luiz would report
16 this as kind of a way of moving forward to the meeting two weeks
17 from now. **With that, are there any objections to this motion?**
18 **None. Jason and Harry, you've got ten seconds to object. The**
19 **motion carries.**

20
21 All right. It's incumbent on me, I think, working with Ryan, to
22 kind of send out an email of sort of the ground rules. I have
23 already noted where the interest lies, and so the expectation is
24 that participation of those that have a great interest, but, if
25 you also want to participate, do let me know, so that I can make
26 sure that you're on the distribution list. Thank you. All
27 right. This completes this agenda item, and now is the time for
28 a break, and so let's break for fifteen minutes.

29
30 (Whereupon, a brief recess was taken.)

31
32 **CHAIRMAN POWERS:** Luiz will add to the discussion after the
33 presentation, and so Dr. Cody. Thank you, Dr. Cody.

34
35 **REVIEW MRIP AND STATE SURVEY DATA COLLECTION AND CALIBRATION**
36 **EFFORTS**

37
38 **DR. RICHARD CODY:** Thank you for inviting me here to give you an
39 update on MRIP activities. What I am trying to do is just
40 briefly outline some of the stuff that we're dealing with right
41 now and some of the activities that we have been involved in
42 over the past year or so and continue to be.

43
44 What I thought I would do is briefly outline some of the things
45 that are going on with MRIP estimation, for instance, the Gulf
46 supplemental surveys, which is of interest to this group, a
47 fishing effort survey and some of the studies that we've been
48 working on, and also our involvement with the Modern Fish Act,

1 electronic reporting, the National For-Hire Workshop, of which
2 Luiz was the chair, and that occurred fairly recently here in
3 St. Pete, and then some of the work that we've been doing on
4 rare-event species, which might be of interest also to this
5 group.

6
7 The first item really related to MRIP estimation is there are
8 two workshops that we have been asked to participate in, the
9 second of which is the Gulf Reef Fish Survey workshop, and this
10 resulted from some interactions that we had with Florida Fish
11 and Wildlife Commission on the disparity, really, between the
12 estimates coming out of the Gulf Reef Fish Survey and the FES.

13
14 I wanted to take a deeper dive into those differences and look
15 at some of the factors that affect that, and one thing, for
16 instance, right now that we are working on with the agency is to
17 look at, even though these are two mail-based surveys, how they
18 account for off-frame effort is very different, and so we're
19 looking at ways that we can modify the APAIS questionnaire to
20 reflect how the GRFS collects information, and vice versa, and
21 so those are some of the things we've been looking at.

22
23 I think, for the GRFS workshop, it's probably safe to assume
24 that the workshop will probably result in follow-up studies and
25 pilot studies to look at the differences there.

26
27 The South Atlantic Council SSC workshop is coming up in August,
28 and this will be really to provide a little bit more background
29 information on the calibration models used for both the APAIS
30 and the FES, but concentrating on the FES, mostly, because the
31 FES really accounts for most of the differences that we see
32 between the old CHTS, the Coastal Household Telephone Survey
33 based estimates and what we have now.

34
35 The council wanted more, I guess, guidance on how to interpret
36 trend information as it relates to the calibrations, and so
37 we'll be taking a deep dive into a number of species, including
38 king mackerel, greater amberjack, red porgy, golden tilefish,
39 and maybe one more there as well, and so that's where that is
40 going.

41
42 This is some more information on that workshop, and the council
43 released a set of terms of reference for the workshop, and so
44 what I've done here is tried to summarize those here, and there
45 are two main terms of reference that they referred to, and the
46 first is a review and description of the differences between the
47 Coastal Household Survey and the Fishing Effort Survey
48 estimates, and they want us to take a look at outliers and their

1 impact on catch estimates and also the impact of the
2 calibrations on the generation or the accentuation of possible
3 outliers in the estimates.

4
5 We'll also look at the impact of the Southeast Fisheries Science
6 Center post-survey processing of weight information as well, and
7 that's something that we won't be directly providing any input
8 on, but that's part of the terms of reference.

9
10 Examining factors likely to explain some of the differences
11 between the Coastal Household Telephone Survey and the FES
12 estimates is one of the main components of that first term of
13 reference, and then, as far as the second term, establishing
14 approaches for use of the FES estimates, really as they pertain
15 to ABC values and comparing the revised estimates to the
16 previous estimates and seeing if the ABC control rules are
17 adequate.

18
19 Integration and calibration of Gulf survey estimates of red
20 snapper catch, the Gulf surveys, we had a workshop last
21 September in St. Petersburg to look at ways to integrate and
22 calibrate the surveys into MRIP, and so, out of that workshop,
23 basically we came up with a couple of homework assignments for
24 statistical consultants, and those were really to look at
25 composite estimation as a way to integrate the different
26 estimates from the different surveys, including the MRIP
27 estimates as well.

28
29 What they did was they took information that was provided by the
30 states and looked at ways, with the hope that we could use
31 composite estimation as a way to automate a process for
32 generating a Gulf-wide estimate, and that didn't transpire, and
33 there were some things that concerned the consultants about the
34 behavior of the estimates, and so they are continuing to look at
35 that and look at different ways that they can best integrate the
36 estimates to come up with a Gulf-wide estimate, and so that work
37 is continuing, and I don't have much to report there. We expect
38 some more information possibly towards the end of this year on
39 that.

40
41 Right now, the consultants are mostly concerned with developing
42 calibrations for the state surveys, and so the decision was
43 made, really, that we needed something in place by the end of
44 this year, and we would look at simple ratio-based calibrations
45 as the first step anyway, and we could look at more
46 sophisticated model-based approaches going forward, and so that
47 work is being done right now.

48

1 We had a call with Westat, which is the company that Jean
2 Opsomer, who had been involved with the APAIS and FES
3 calibrations now works for, and so they have a statistician
4 right now that's working on it full time, and so we expect to
5 have some results of those calibrations possibly by the end of
6 September, and then hopefully finishing them up by the end of
7 the year.

8
9 The need for more sophisticated calibrations, we're going to
10 continue to look at that, but I think that it has to be kind of
11 understood that that may not be necessary, but I think that
12 we're in pretty good hands, as far as getting a good handle on
13 that, because of Jean Opsomer's involvement with the process.

14
15 The Fishing Effort Survey, obviously, that's probably our most
16 controversial thing right now, and there are a number of
17 different things going on with that, and I have listed two here,
18 but there is another that I'll refer to as well.

19
20 The first is a push-to-web design pilot study, and so this was
21 started in the fall of 2018, and it's finishing up right now,
22 and they are working on the results of that, and so what it did
23 was it examined three different response options for the FES,
24 and you had your traditional paper option that is currently in
25 use, and then you had a mix of paper with a push-to-web
26 component, and so some of the respondents that received paper
27 surveys will be asked if they want to complete the survey
28 online, rather than do a paper survey.

29
30 They will be comparing the results of those, to see if there's
31 any differences between the estimates based on the mode for
32 responding. Then, also, there's a web-only response, and,
33 obviously, we had to do it this way, because the web-only --
34 Normally, there are some rules put in place to control what
35 responses are made or to control for error in the responses and
36 duplicate responses, multiple responses and that type of thing,
37 and we felt like, for a comparison of the paper and the web
38 option, we needed to look at a web design that was as close as
39 possible to the paper option as well, so that we had a valid
40 comparison, and so that's what is going on with that.

41
42 There is a non-response bias study that's being developed right
43 now with the help of Westat and Mike Brick, who had been
44 involved with the development of the FES survey early on and in
45 the initial pilot studies that were used to develop the survey,
46 and they're coming up with the design for that, and this is the
47 second non-response follow-up.

48

1 The first, as I said, was done as part of a pilot study, and so
2 what it does is it looks at responses from initial respondents,
3 and then it tries to coax the non-respondents into responding,
4 and so you get an increased response rate, and then you can
5 compare the two and see if the answers are different, and it's a
6 standard sort of method for looking at non-response.

7
8 It does require a periodic evaluation, and so we think that
9 coming up with a design that we can implement sometime in 2020
10 is a reasonable approach, and then those will probably follow at
11 periods thereafter, depending on the results of that study.

12
13 The last one that's not on here, and I apologize for that, is a
14 questionnaire-type design pilot study that we're looking at.
15 One of the concerns with the FES is that the shore estimates are
16 extremely high, way higher than they were with the old Coastal
17 Household Telephone Survey, and so we're looking at how the
18 question is asked on the survey.

19
20 Right now, shore-related fishing questions are asked before
21 private boat questions are asked, and so what we'll do is we'll
22 change the order of those, to see if there is any differences in
23 the response rates or in the responses from the respondents with
24 respect to their fishing activity.

25
26 The Modern Fish Act, we're in the process right now of
27 finalizing a statement of work for the National Academy to
28 conduct another review, and this review will look at MRIP
29 compatibility with in-season management of annual catch limits,
30 and so that's being finalized right now, and there is a chance
31 that that may come online in late September, around that time of
32 the year, and it's expected that the National Academy will use a
33 format similar to the one that Luiz co-chaired back in 2017 for
34 MRIP, in which there will be a regional component to it, with
35 regional meetings and regional input as to the question of the
36 adequacy of MRIP when it comes to in-season management. We
37 would expect that probably to get started sometime late this
38 fall.

39
40 There are a number of other requirements from the Modern Fish
41 Act, and they are listed here, and I listed the different
42 sections here, and the act itself is not very long, and so you
43 can kind of pull those out and look at them, but the three at
44 the bottom refer specifically to MRIP and then also to reports
45 that Sustainable Fisheries will have the lead on, and Rick is
46 involved in development of one of those reports.

47
48 The first one, greater incorporation of data from states and

1 NGOs and other sources, the Sustainable Fisheries has the lead
2 on that, and there is also a reporting requirement to look at
3 state partnerships and to develop best practices for
4 implementation of the state programs, and so we're looking at
5 that as an opportunity to describe the process that's in place
6 with the FINs and ACCSP as the mode for the partnership, and
7 probably extending that.

8
9 The last one has to do with implementation of the 2017
10 recommendations, and, as you all know, the National Academy has
11 made a number of different recommendations based on their
12 review, their 2017 review, to MRIP, and so MRIP, right now, has
13 a response framework in place, and it is part of the annual
14 implementation plans that we have to account for those
15 recommendations in there. What this report will do is probably
16 revisit that framework and determine if it's adequate to address
17 those recommendations and also the expectations of Congress and
18 leadership.

19
20 Electronic reporting, there are two things that I wanted to
21 report on here. There is a national for-hire workshop, and,
22 again, Luiz is involved with that, chairing that, and then also
23 some of the work that has been done on electronic reporting, and
24 I will direct your attention to a number of different reports.

25
26 There is the Westat report, and that's done by Mike Brick, and
27 that's his summary of the state of the art as it pertains to
28 opt-in reporting, and it's his assessment of its suitability for
29 providing population-level estimates, and so that's out there,
30 and that's actually online right now, on the MRIP website, and
31 then we have two other reports that we are involved in, and one
32 was with FWC, with Rob Ahrens from the University of Florida,
33 and that's for an iAngler study, and then there's an iSnapper
34 study as well, with Greg Stunz's group, as well, and so those
35 reports are out there.

36
37 There is a fourth report that is due, and it's under review
38 right now from NOAA, and this might be a way to summarize or a
39 way for you to get a summary of what's in those three reports,
40 since they are fairly extensive, but what this does is it's
41 an internal report done by the research evaluation team for NOAA
42 Fisheries, MRIP, and what it does is it looks at those three
43 reports and sort of tries to summarize the findings of those
44 reports as they pertain to estimation, or what we can expect
45 from opt-in reporting.

46
47 Then another thing I will direct your attention to is our work
48 with the South Atlantic Council on their MyFishCount program.

1 Right now, we have provided funding for an additional year for
2 MyFishCount, and the focus, initial focus, for us is on
3 improving angler participation in that program.

4
5 As I mentioned, related to electronic reporting is the national
6 for-hire workshop, and this occurred earlier this month in St.
7 Pete, and it was co-sponsored by NOAA Fisheries and by ACCSP,
8 the Atlantic Coastal Cooperative Statistics Program, and there
9 were participants from, on a national level, the Gulf, Atlantic,
10 and Pacific coasts. There was heavy participation, obviously,
11 from the Southeast Regional Office, and Jessica Stephen and
12 others were there.

13
14 It looked at methods and standards for accounting for the entire
15 catch, using electronic reporting and other methods, and also
16 discussed at the workshop was a need for probability-based
17 sampling in conjunction with mandatory reporting. Obviously,
18 those needs are modified depending on what is in place for
19 different logbook reporting systems, whether VMS is in place and
20 whether you want verification of catch or effort or both, and a
21 report from that workshop is expected sometime towards the end
22 of this year, and it's in development right now.

23
24 Just some of the take-home things we got from the for-hire
25 workshop is there was a recognition that a benchmarking period
26 would result in duplicate reporting, which is something we want
27 to avoid in the long term, but it is really unavoidable for a
28 transition period or a benchmarking period if we are to produce
29 some kind of a calibration that would allow a transition between
30 the different methods.

31
32 There was also an acknowledgement that there needed to be
33 consideration for a mix of different methods to cover state and
34 federal vessels, and so, even though electronic reporting is
35 becoming mandatory in the Gulf and the South Atlantic for
36 federally-permitted boats, that doesn't mean that the states are
37 necessarily onboard or in a position to implement electronic
38 reporting for the state boats. One of the things that was
39 discussed there was evaluating the for-hire survey and getting
40 it certified, and it's not certified at this time.

41
42 For logbook reporting also, the need for probability-based
43 sampling to correct for offering effort and reporting error was
44 also discussed, and so the idea that an electronic reporting
45 system would result in a number and not an estimate is something
46 I think that is an expectation, at least with some members of
47 the industry, and so that's something that will be a
48 consideration in transitioning to electronic reporting.

1
2 Then, also, heavily discussed at the meeting was the capture-
3 recapture methodology developed by MRIP consultants, and what
4 became obvious is that there is more than one way to come up
5 with an estimate, a valid estimate, based on the methodology and
6 based on small-area estimation approaches and the domains used.

7
8 This is something that has come up, and so there will have to be
9 decisions made on picking an estimate, and probably sticking
10 with it, or an estimator and sticking with it, and so that's
11 something that did concern some of the participants and that
12 there would be a messaging challenge with that and then with the
13 idea that we're still dealing with estimates, no matter what way
14 you slice it, and that might be a challenge.

15
16 Rare-event species, we established a working group for this, and
17 it has participation from the Northeast Fisheries Science Center
18 and the Southeast Fisheries Science Center and also from the
19 Regional Offices, and Mike Larkin and Jack McGovern participate
20 on it, and so we established this with the idea of looking at
21 ways to improve estimates for rare-event species.

22
23 Rare events, obviously, it depends on how you define it, but so
24 what we've decided to do is basically look at a suite of species
25 from the Northeast and the Southeast, a small suite that
26 represents sort of a range of different levels of rarity, going
27 from something like blueline tilefish and snowy grouper up to
28 king mackerel, where we're dealing with possibly mode-level
29 estimates that are imprecise at certain times of the year or
30 certain occasions and to common species as well.

31
32 That work is ongoing right now, and, again, Westat statisticians
33 are involved with that, and, mainly, that's, again, because of
34 John Opsomer's involvement with looking at small-area estimation
35 methods, and so what we've identified are a number of different
36 approaches that we can use to evaluate rare-event species.

37
38 There is the idea of alternative unbiased estimators using
39 small-area estimation, and so that would be borrowing strength
40 from different cells to improve the precision of estimates and
41 also looking at multiyear averaging or smoothing, more model-
42 based approaches that would look at averaging over a number of
43 years, three or five or more, in some cases, to come up with
44 another approach.

45
46 Then a hybrid method, which would be a mix of the small-area
47 estimation and modeling approaches, and what we tried to keep in
48 mind is the sensitivities of ACL management and their

1 requirements for developing so-called alternate estimation
2 methods, and so we expect -- We have a meeting with the
3 consultants on this towards the end of September, and we expect
4 at least an update on the progress of that, but the idea is
5 that, towards the end of this year, we would have some methods
6 available that could be looked at. Basically, that's what I
7 have from MRIP.

8

9 **CHAIRMAN POWERS:** Thank you. Luiz, you have the floor.

10

11 **DR. BARBIERI:** I don't have much to add. I think that Richard's
12 presentation was very thorough. I guess, as a matter, looking
13 at our scope of work, it's really not an action item for us to
14 address, and there is no expected action from the committee, and
15 it's really just an informational type of report from the agency
16 regarding where we are on some of these issues.

17

18 I think some of the questions that might come up from members
19 regarding the inclusion of some of the so-called state surveys,
20 the surveys for red snapper in the Gulf, into stock assessments
21 and how those things align, were the issues that Richard brought
22 up here, but I don't see any additional points beyond that, Mr.
23 Chairman.

24

25 **CHAIRMAN POWERS:** Thank you. John.

26

27 **DR. FROESCHKE:** Just real briefly, one of the things that we
28 talk about in the office every week, as these stock assessments
29 come through, and there's just ambiguity, as far as input units
30 and output units and what the quotas will be monitored in and
31 how we communicate this to the public, when numbers might seem
32 very different, and then there's the allocation issues, and I
33 understand that all of these issues are being worked on.

34

35 I guess I'm just uncertain, as these stock assessments -- We'll
36 have a red grouper assessment that you'll be reviewing next, and
37 there is more coming along, and how are we going to
38 operationalize this before we get clear guidance?

39

40 **DR. BARBIERI:** John, I don't have an answer for that, of course,
41 and that's something that needs to be discussed, but just one
42 other item is that the SEDAR Steering Committee will have a
43 meeting coming up on August 26, and that will be a webinar, to
44 be discussing what is called the white paper that basically
45 tries to outline parameters for all of those points that John
46 just brought up and how are we going to be handling, during the
47 time that these surveys are being calibrated.

48

1 I guess all the Gulf surveys, the state surveys, have been
2 certified by MRIP right now, but there is a need to calibrate
3 them, and then how the integration of those might be happening
4 with MRIP. During all of this transition, there will be some
5 guidelines in this white paper where the Science Center is going
6 to have some direction on what's going to be included in
7 assessments and then some guidance on management units and the
8 like, and so that's something that there is going to be
9 discussion after that webinar.

10
11 **DR. CODY:** That white paper is undergoing the approval process
12 right now for release, but it's expected to be included with the
13 SEDAR Steering Committee briefing materials, and so probably
14 towards the middle of the month.

15
16 **CHAIRMAN POWERS:** Thank you. Ken.

17
18 **DR. ROBERTS:** Thank you, Mr. Chairman. The question I have is
19 the Modern Fish Act implores you, in Section 102, to incorporate
20 data from NGOs, and I am wondering if you could just comment on
21 the quality and quantity aspects of trying to incorporate that
22 into a system that has been rigorously reviewed over the years
23 if you could, please. Thank you.

24
25 **DR. CODY:** I can talk a little bit about the MRIP certification
26 process. I mean, obviously, there's a process in place with the
27 SSCs to review, and I'm sure SEDAR as well, different sources of
28 data, but MRIP certification is rigorous, in that it looks at
29 survey design and things like that, but it pertains largely to
30 producing estimates, population-level estimates and alternative
31 estimates, to be considered.

32
33 I don't think it's considered a requirement for consideration as
34 BSIA, but, if you go the route of being certified or seeking
35 certification, obviously, it provides a level of rigor that may
36 bolster the chances of it being considered.

37
38 **CHAIRMAN POWERS:** Any other comments? Thank you very much.
39 That was helpful. We're moving on to Agenda Item IX, the Gray
40 Triggerfish SEDAR Progress.

41
42 **DISCUSSION OF SEDAR 62: GRAY TRIGGERFISH PROGRESS**

43
44 **MR. RINDONE:** Thank you, Mr. Chair. That's just a discussion
45 item. I don't know if Jeff or Shannon wants to briefly touch on
46 that.

47
48 **DR. ISLEY:** Just an update on what's going on with the gray

1 triggerfish assessment is, during the data and assessment
2 workshop, some work by Shervette and Dean identified a bias in
3 the ages derived from spines based on otoliths, and, as a
4 result, it threw a monkey-wrench into the age-based assessment
5 that we had previously done using spines, and so we've switched
6 to a length-based assessment, and we have incorporated age data
7 provided by Will Patterson and his lab, where we have developed
8 a growth curve from the otoliths and are using that in the
9 length-based method.

10
11 We currently have a model, and it's a working model, and it's
12 functional. It's not just a base model, and we still have a lot
13 of testing and tuning to do, but we're making a lot of progress,
14 considering we had to start from scratch, and so I will take any
15 questions about it at this point.

16
17 **CHAIRMAN POWERS:** No questions? Shannon.

18
19 **DR. CALAY:** I think that some concerns have come up regarding
20 whether this assessment will be delivered on time, and it is
21 still our intention to meet that deadline, and we are somewhat
22 behind schedule, due to the introduction of new data at the
23 data/assessment workshop and the delay required to actually
24 obtain that data from Will, and thank you, and so we -- At the
25 moment, we have not requested a delay, but, if we did, we would
26 be talking about delaying by one SSC meeting, and so roughly one
27 quarter, but we're still striving to meet the deadlines at this
28 time, and we'll notify you if we need to ask for a delay.

29
30 **CHAIRMAN POWERS:** Thank you. No other comments? Then Item X is
31 research and monitoring priorities, and this is Ryan and John
32 Mareska.

33
34 **DISCUSSION OF COUNCIL RESEARCH AND MONITORING PRIORITIES FOR**
35 **2020-2024**
36

37 **MR. RINDONE:** Thank you, Mr. Chair. I'm going to move to the
38 back and work on the Word document with you guys up on the
39 screen on this, in case you have any edits. John, if you want
40 to start talking about it.

41
42 **MR. MARESKA:** Sure. I guess the last time we looked at this was
43 in 2014, and that document was substantially different than what
44 was produced for the final priorities, and so, just as trying to
45 help us go through this document, because it's exciting, and
46 it's gotten longer, and so I've gone through -- If you can
47 scroll a little bit, I have just tried to highlight what has
48 actually changed between the versions, just to kind of inform us

1 a little bit.

2
3 There is four different sections in here, and the first section
4 is about the multipurpose research and monitoring programs, and
5 the second part is basically just about fish biology, and the
6 third part is about social and economic considerations, and the
7 fourth part is about ecosystem considerations.

8
9 Each one of these sections has different priority codes, A
10 through C, for most of them, and Section 2 has A through D, and
11 ecosystem only has A through C, and so I think that's an
12 oversight. I think there's supposed to be a range there, and so
13 I'm sure you guys have thought about this a lot and all the
14 things that we've talked about over the past day-and-a-half
15 about reference points and species ID problems and OY, and I
16 guess we're looking forward to some suggestions to improve this
17 list.

18
19 Something that I have kind of looked at is just the priority
20 codes, where a lot of things remain an A, and they've been that
21 way I guess for ten years now, since these are five-year lists
22 and stuff, and so things aren't changing, and I am not sure what
23 needs to happen, and so, at this point, we'll just start
24 scrolling through, and, if anybody has comments about any
25 section, please speak up.

26
27 **MR. RINDONE:** Just for further clarification, a lot of these --
28 Like John said, these are the same as they were for the last
29 cycle, and we have added more than we've taken away, and you
30 will see some comments off to the side, and those are staff
31 notes from where we've gone through and looked at some of these
32 things, ahead of this meeting.

33
34 For instance, right here, under fishery-dependent monitoring and
35 sampling, develop and implement an effective and efficient
36 electronic data reporting system for the recreational components
37 of the fishing community, specifically the charter/for-hire
38 vessels, and so an electronic reporting system has been
39 developed, and it is not completely and uniformly implemented
40 yet, but, as Ava noted, we do not have the same in place for
41 private anglers, and so that's just clarifying the status of
42 that particular item for you guys.

43
44 **MR. MARESKA:** Item e right there, estimation of discards, the
45 last couple of sentences there is a change, and so the better
46 information, and that is a change in the document from the last
47 version.

48

1 **MR. RINDONE:** This is a broader SEDAR recommendation that we see
2 a lot, and this relates directly to the amount of observer
3 coverage that is available compared to the commercial fleets,
4 which have much broader observer coverage, by comparison. Of
5 course, we don't have any observer coverage for the private
6 recreational sector. All the information on discards in that
7 particular situation is angler-reported. Shannon.

8
9 **DR. CALAY:** I just wanted to make sure that the group is aware
10 that we are frequently asked to produce estimates of discards in
11 weight, and discards are self-reported and not observed by the
12 port samplers, and so we do rely on information that we get from
13 observer programs, for example, and so I support this
14 recommendation. It would be a critical improvement to stock
15 assessments to have better information about the size frequency
16 of the discards.

17
18 **MR. RINDONE:** Benny.

19
20 **DR. GALLAWAY:** I would like to point out that all the discard
21 information that I've seen is from recall at the end of a trip
22 or later, and we have done some studies where we've put
23 observers on boats informally and measuring discards and then
24 having the captain independently report the discards from recall
25 later, and they do not agree, and I would suggest that, sooner
26 or later, we're going to have to realize that, if we want good
27 information, we're going to have to spend the money on observers
28 and get people in the field making correct observations. This
29 recall stuff is just not going to cut it if we're serious about
30 getting -- That's a huge component of mortality on the
31 assessments, and we should focus on getting better information.

32
33 **MR. MARESKA:** Go ahead, Kari.

34
35 **DR. MACLAUHLIN-BUCK:** Under the bycatch one, and you do have a
36 line about practical methods for minimizing bycatch, and the
37 other side of that, especially for the private rec, is getting
38 them onboard with best practices and descending devices and all
39 these things to reduce their discard mortality, and then is
40 there -- Maybe it's in here somewhere else, but is there another
41 component of how you evaluate if those are working, because I
42 feel like, when interacting with the angling community, a lot of
43 them are onboard with it, and it will be a process to get
44 everybody onboard and that just be a part of what everybody
45 does, but then they also always want to know how are we going to
46 evaluate if these practices are reducing discard mortality and
47 how do we get that incorporated back in there, and I feel like
48 evaluation of those types of practices should also be included

1 as -- I don't know how you do that, but I feel like it's really
2 important to figure out how to evaluate those, the effects.

3
4 **MR. MARESKA:** I am looking at Item g, which is a little bit
5 further down, that talks about discard mortality changes, and I
6 don't think your concern is actually addressed in here, if you
7 want to read over that real quick.

8
9 **DR. MACLAUHLIN-BUCK:** I feel like this is -- Yes, that captures
10 it, but maybe it should be a higher priority, and that's just my
11 recommendation.

12
13 **MR. MARESKA:** All right. Let's see, and so I think, to improve
14 Item e, the estimation of discards, I think we need to be
15 specific there and indicate that we need the length information
16 for the discards.

17
18 I guess we can move along to the ecosystem-based management, and
19 so this is specifically just to the data collection needs for
20 the ecosystem models, and so the ecosystem models are a separate
21 part right there, and the only thing that is new under the
22 ecosystem data needs is under Item b, the ecological
23 relationships, and it's the third bullet down, the understanding
24 of the predator-prey and competitive interactions for the
25 ecosystem-based management. Just to note that the priority
26 codes for these items are B, but, for the model development,
27 it's a C.

28
29 **DR. CHAGARIS:** About the priority code, and, obviously, I chimed
30 in because it was about ecosystem models, but I see some other
31 places in here where the tool is getting a lower priority code
32 than maybe the research question, and so, if you had a high
33 priority for estimating red tide mortality, maybe that would get
34 a priority code of A for some species, but then you have an
35 ecosystem model that has a priority code of C, whereas the
36 modeling may be the only way to get at population-wide estimates
37 of mortality.

38
39 The same could be said for further down, and we'll get to
40 eventually, for like a large-scale mark-recapture program, and
41 it has a low priority, but, if it was reframed to say what if
42 you could get independent estimates of exploitation, or even
43 stock size, and that was a high priority, then maybe the large-
44 scale tagging program would have a higher priority. I see in
45 the document where there is cases where the tool gets a lower
46 priority, and it's not reflective of the priority stated for
47 each research question, and does that make sense?

48

1 **MR. RINDONE:** A lot of these priority codes are holdovers from
2 the last time, and so you guys can, obviously, recommend that
3 they be changed.

4
5 **DR. CHAGARIS:** Then, specific to the section that we're on now,
6 I'm glad to see that the predator-prey interactions are in
7 there, and that is a major data gap, especially for certain
8 species, and I don't know if it's appropriate to add more detail
9 for that specific component.

10
11 **MR. RINDONE:** You don't get what you don't ask for.

12
13 **DR. CHAGARIS:** Right, and so I would say that some of the -- If
14 we wanted to expand on that particular -- I mean, this is just
15 one bullet in a ten-page document, but this is really a major
16 data gap, and I would say that, specifically, what's lacking are
17 contemporary diet composition data for large-bodied reef fish in
18 deeper water, because most of our diet data are coming from
19 trawls and nearshore surveys, and even the hook-and-line surveys
20 -- The FWC runs for larger snapper and grouper, we have
21 barotrauma issues, and so we don't get diet data out of those
22 surveys, and so this would probably have to require some
23 specific targeted sampling for certain species, or probably the
24 highest-priority species, for the council.

25
26 The other thing that's missing, specifically in terms of
27 predator-prey, are the pelagic component, and we don't really
28 have good comprehensive surveys, fisheries-independent surveys,
29 for pelagic predators, and so mackerels and things, and I'm
30 thinking specifically about the issue we're in with menhaden,
31 Gulf menhaden, where we are building the ecosystem models, and
32 we're having to make a lot of assumptions about the predator
33 dependence on menhaden, based off of the existing diet data, and
34 a lot of that is due to a lack of information on the pelagic
35 predators. Basically, the further offshore you get, and the
36 larger-bodied predators, we have less information.

37
38 **DR. PATTERSON:** Ryan, in the scope of work, it says these
39 priorities are updated every five years and approved by the
40 council and help to inform funding priorities for continuing and
41 proposed research and monitoring efforts as they relate to
42 managed species in the Gulf, but the council doesn't actually
43 typically fund these types of projects, and so how are these
44 incorporated into things like MARFIN or CRP?

45
46 **MR. RINDONE:** Carrie, can you elaborate on it? My understanding
47 is that they do help inform MARFIN priorities, but you're right
48 in that the council does not directly offer research grants to

1 support any of the priorities that are listed here.

2
3 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, and so we point a lot of
4 people to this on our website, particularly after Deepwater
5 Horizon, with the various pots of money, and I don't dare
6 mention all of them, and I get them all confused, but we use
7 that a lot regarding what the council's priorities are.

8
9 We also use this list when we are reviewing the MARFIN
10 priorities, and I have a chance to look at that now, in my
11 position, and the S-K priorities, and I think that's with
12 council leadership and myself, and with the Cooperative Research
13 priorities, and so we try to take a look at this, and a lot of
14 them are very large, and so it overlaps regardless, but we use
15 it as a tool in that way, and we point a lot of other folks to
16 this as well that may have funding for specific projects.

17
18 **MR. MARESKA:** When I see these large bulleted lists of data
19 needs, it seems like all of these have equal value, and so
20 someone that has more knowledge of the ecosystem data needs and
21 which ones should have a priority, and I think they should be
22 communicated to the council, so they can prioritize these
23 bullets, and so this just too long of a list to assume that all
24 of them are equal.

25
26 **MR. RINDONE:** This list will be brought back before the council
27 for their approval in October, and so you guys would have
28 another opportunity to take a look at it in September as well,
29 and that will give you maybe a little bit more time to digest
30 this, but just going through it and identifying where certain
31 priorities might need to be adjusted and where additional
32 clarification might be necessary, or even we hit this bullet
33 point and we can delete this. That's all very helpful.

34
35 **DR. SCYPHERS:** I could also be overlooking this, but one thing
36 I'm not seeing is much explicitly on shore-based fishing, and I
37 think that's come up quite a few times recently in the gray
38 snapper stock assessment, and it's coming up in yellowtail, in
39 the ongoing data workshop, quite a bit, and so it could be
40 explicitly listed there, even though it's not a big component of
41 yellowtail, and it was for gray, but I think pointing out the
42 uncertainties with shore-based effort and behavior could fit
43 probably in the discard mortality section, which is, almost to
44 Dave's points, is prioritized pretty highly, and then some of
45 the specific species are prioritized lower, but calling out that
46 part, whenever possible, would be something that I think could
47 be needed.

1 **MR. RINDONE:** Steven, you recommended putting it here in discard
2 mortality, but it seems like it's a very large topic that is
3 kind of multifaceted, and, since you would be interviewing --
4 Would that perhaps fall better up here in like fishery-dependent
5 monitoring and sampling and trying to interact directly with
6 people fishing in the shore mode? I am just trying to figure
7 out exactly where to put everything, because it seems like there
8 is multiple questions that need to be answered with respect to
9 this particular fishing mode.

10
11 **DR. SCYPHERS:** Yes, and I see your point. I think one answer to
12 that could be -- I think it's to Benny's point earlier, but
13 there could be an explicit study that involved looking at some
14 of the reported measures of this alongside observations, and so
15 this could be something that is a bullet point, perhaps, under
16 there on its own, but then I don't know how this would
17 particularly interface with some of the ongoing assessments,
18 maybe, with FES, where they were talking about that shore-based
19 is an area that's getting an extra look there already, and so
20 that's probably not a good answer.

21
22 **DR. LORENZEN:** I have a little addition, and I just sent you an
23 email with some text, under social and economic. I think it
24 would be useful to have research on evaluating sort of
25 communication and stakeholder engagement approaches, and so, for
26 example, we are talking about bringing more people into
27 voluntary reporting, and then that's a very researchable thing,
28 and so what motivates people to do that and what are the
29 barriers and so on, and so, in the big area of communications
30 and stakeholder engagement, to do some research that would
31 actually inform improvements of how we go about that.

32
33 **MR. MARESKA:** Kai, was your intent that that would go under the
34 ecosystem?
35

36 **DR. LORENZEN:** I was thinking under the social and economic. I
37 mean, it's sort of a bit overarching.
38

39 **MR. MARESKA:** I was just making sure Ryan is in the correct
40 place, because the last bullet under b, the ecological
41 relationships to the ecosystem stuff, is develop the social and
42 economic indicators, and so I didn't know if that was going to
43 be in addition to what you are proposing.
44

45 **DR. LORENZEN:** This is more about how we communicate and not so
46 much about the indicators.
47

48 **MR. MARESKA:** Okay.

1
2 **DR. LORENZEN:** Thank you.

3
4 **MR. MARESKA:** Ryan, let's go back up to Item h, the episodic
5 mortality events, and I guess the only comment there was work
6 towards predictive abilities to generally estimate potential
7 effects of such events in the future. Okay. We regularly do
8 this now, and so it's already being done.

9
10 **MR. RINDONE:** This is my opinion from my observations of the
11 SEDAR process, which is why I put this comment in here. To the
12 extent that we can, and to the extent that we have the data to
13 do so, we do this now, and so whether you want to continue
14 having this in there or not is something you guys can discuss,
15 but I didn't know if you wanted to keep things in here that we
16 are currently doing.

17
18 **MR. MARESKA:** You have got predicative abilities, but I don't
19 think these predictive abilities are actually incorporated into
20 potential impacts on the stocks in the stock assessment itself,
21 correct?

22
23 **MR. RINDONE:** I will let Shannon go.

24
25 **DR. CALAY:** It's a difficult question. When we know something
26 has occurred, like the red tide in 2018, that actually occurred
27 after the terminal year of the stock assessment, and so that's
28 in the projections, and so we do that sort of work, where we
29 incorporate known environmental indicators.

30
31 We don't yet -- We also, for example, try to get a better
32 estimate of the terminal year recruitment from some modeling
33 products, connectivity modeling products, that we know are --
34 Like loop current dynamics that are suggestive of recruitment,
35 and so we put that in as a predictor of what the terminal year
36 recruitment would be, because that estimate is not well informed
37 by other sources of information in the stock assessment model,
38 because there is no -- Because there fisheries don't usually
39 fish on age-zeroes, except the shrimp bycatch, but we don't
40 right now incorporate predictions of ecosystem events that might
41 occur during projections that we don't have estimates of. Do
42 you see the nuance that I am trying to communicate?

43
44 The word "predictive" here in this recommendation -- We could
45 theoretically predict a time series of Gulf of Mexico sea
46 surface temperature related to some characteristic of a stock,
47 say growth, and put that into the projections, but we don't
48 currently do that.

1
2 **MR. MARESKA:** So no wordsmithing on that?

3
4 **DR. CHAGARIS:** On this episodic mortality events, and maybe it
5 goes into this section, or maybe there's a section later that it
6 might bit better in, but the other thing that I see missing with
7 this is how do we manage in the face of these extreme mortality
8 events, and so how would you adjust harvest or catch limits in
9 the year following a red tide event?

10
11 I think that there is also a big need for some type of
12 management strategy evaluations and simulations, and I know that
13 Skyler has done -- You all have done some of this at the Science
14 Center, but I believe there is still work to be done on that, so
15 that, when we are faced with this situation where you're in a
16 projection scenario and a red tide event occurs, or something
17 happens, what is the advice that we give, versus just a decision
18 table of kind of what-ifs, and so there could be some simulation
19 work to inform the management response to extreme events, or
20 continued work.

21
22 **MR. MARESKA:** I see that Luiz isn't here, but I was just
23 wondering if there's any kind of programs in place to actually
24 try and quantify the extent of the mortality a little bit.
25 There is Luiz. Luiz, we're talking about these episodic
26 mortality events and talking about harmful algal blooms, and, as
27 an example, is there any mechanism to try and estimate the
28 impact on fish stocks and collect actual information to quantify
29 the abundance and the extent of those impacts?

30
31 **DR. BARBIERI:** Well, I think Dave Chagaris would be better
32 prepared. Last time, I guess for the last couple of
33 assessments, we worked with Dave in kind of setting up the
34 protocols, the data, the actual data to go out there and count
35 that fish or collect fish to look at the age composition of what
36 has been impacted or size composition, and it's really prone to
37 a fairly large amount of error, and so it's something that is
38 difficult to evaluate, other than you look at trends in indices
39 of abundance over time. I mean, we have these indices of
40 abundance, and you can see trends going up and down pre and post
41 events, but Dave would know more about the specifics of how do
42 you translate this into inputs.

43
44 **DR. CHAGARIS:** This comes up a lot, and FWC has their Fish Kill
45 Database, and I don't know if Alisha is here, but, when she was
46 studying under Cam Ainsworth, she made an attempt to incorporate
47 the fish kill data into a red tide analysis, and there's issues
48 with that as voluntary reporting, and you're only reporting the

1 fish that wash up on the beach, and you have observations from
2 research vessels of dead fish, but those are only ones that
3 float, and so this is why we've resorted to simulation and
4 modeling, where we have species distributions and maps of red
5 tide blooms.

6
7 **MR. MARESKA:** Dave, has your concerns been entered into h up
8 there? All right. Then, Ryan, we can move on to Category II,
9 the priorities associated with individual species, and so I
10 guess what jumped out at me is just everything seems to be a
11 Priority A, particularly for something like red snapper, and so,
12 if none of these priorities were met, I think the rebuilding
13 plan would continue as projected, and so I'm not sure -- From a
14 science point, does this need to be an A? From a management
15 point, I guess it is an A, and so that's just an opinion.

16
17 **MR. RINDONE:** You guys can revise these priority codes at-will,
18 and these are all recommendations that go forward to the
19 council.

20
21 **MR. MARESKA:** Red snapper had a substantial increase in items,
22 and so the first three were pre-existing, and all the remaining
23 bullets were added since the last version.

24
25 **MR. RINDONE:** I added a lot of bullets to several of these
26 species, based on research recommendations from the SEDAR
27 assessments that took place between when the last set of
28 research and monitoring priorities were finalized and a month
29 ago.

30
31 **MR. MARESKA:** If there are no comments on red snapper, we'll
32 scroll down to greater amberjack. The last two bullets are new.
33 Carrie.

34
35 **EXECUTIVE DIRECTOR SIMMONS:** When you say new, you mean that you
36 recommended adding those from the last time that we reviewed
37 this?

38
39 **MR. MARESKA:** No, and so the previous version did not have those
40 two bullets.

41
42 **MR. RINDONE:** In 2014.

43
44 **MR. MARESKA:** So these were added.

45
46 **MR. RINDONE:** These are new research recommendations.

47
48 **EXECUTIVE DIRECTOR SIMMONS:** Could you go back to red snapper

1 for a second? I guess we can look at this again, but some of
2 these seem too specific, and like is this something that should
3 be in the terms of reference, and so that's just a question.
4

5 **DR. PATTERSON:** I was thinking kind of the same thing, Carrie.
6 Not only do they seem too specific, but some of them seem very
7 specific to the stock assessment model or that sound like a
8 sensitivity analysis or that type of thing and not empirical
9 data collection to try to improve model parameterization or try
10 to understand some type of process that feeds into the model.
11

12 **MR. RINDONE:** Part of the research recommendations that come out
13 of the stock assessment can include things like a suggestion for
14 a change in how something is modeled, that there simply wasn't
15 the time, or the methodology simply didn't exist at the time the
16 assessment was being run, and so those -- Under those
17 circumstances, those recommendations are provided as part of the
18 stock assessment process, and I put those in here because it may
19 need to be that someone seeks funding to be able to dedicate
20 time towards fixing that portion of the modeling environment to
21 accomplish X goals, and so it may not be empirical data
22 collection involved with accomplishing whatever that bullet
23 point is, but it may be critical to addressing some other need
24 as part of improving the modeling environment for our
25 understanding of the reality of the species.
26

27 **DR. CALAY:** I certainly understand the desire to retain these
28 recommendations, to make sure that they are considered in future
29 assessments, and I note that a number of these are relatively
30 old, and so some of them have already been completed, and others
31 are in progress, and I don't know where the most appropriate
32 place is to archive these recommendations, but it could be that
33 we work to create an archive of research recommendations and
34 actually indicate whether they have been completed or whether
35 they are in progress or whether they require additional
36 resources that have not been attempted, and I don't know where
37 such an archive belongs.
38

39 **MR. RINDONE:** As part of the SEDAR efforts, we had actually
40 tried to do this a while back for all species across all SEDAR
41 cooperators, and the list was -- Let's just say ten pages looks
42 short, but keeping up with that list, obviously, would take
43 pretty considerable communication between the Center and all of
44 the cooperators, to make sure that it was up-to-date.
45

46 In the absence of that effort being maintained, it has kind of
47 shifted to the research and monitoring priorities, and so, if
48 there's a better way to generalize some of these things, then,

1 by all means, let's change some language, and, if there are
2 things that have already been done, then, by all means, let's
3 remove them from the things that we think that we still need to
4 do. Again, we have time to work on this too, and so --

5
6 **DR. CALAY:** I mean, this reads, to me, like a list of various
7 reviewer comments about specific stock assessments, and, in
8 general, it's been our attempt to look at the body of
9 recommendations and try to establish best practices that --
10 Because different reviewers have different perspectives, and not
11 all of these recommendations are equally appropriate, and so I
12 am not quite where this belongs.

13
14 I think maybe it needs a conversation between council staff and
15 SERO and the Science Center to boil this down to research
16 recommendations that relate to stock assessment that have not
17 yet been accomplished and then maybe a list of what has been
18 recommended and what our response -- Sometimes these cause
19 changes in our common practices, and so they've already been
20 accommodated in SEDAR assessments that come out of one group,
21 and it's not clear to me that all SEDAR cooperators have made
22 the same choices.

23
24 I actually think this is interesting, and I actually think it
25 requires a little more work to coordinate across the various
26 SEDAR cooperators, to make sure that we're all understanding
27 what has been recommended and moving towards common best
28 practices, when possible. Rick suggests a database with key
29 word search capabilities, for example, and so, when we're in the
30 process of structuring an assessment, we would have an
31 opportunity to look through this in some fashion that would be
32 searchable.

33
34 **EXECUTIVE DIRECTOR SIMMONS:** I thought at one point we talked
35 about, after each assessment, when the SSC reviews it, we were
36 going to put like an appendix in the report of the research
37 recommendations from that assessment, and I don't know, staff-
38 wise, if we've been doing that consistently, but I thought we
39 had discussed that at one point, and so perhaps maybe it could
40 live there, but I am not sure about this list currently, and so
41 we can think about it some more, and maybe we can move on, but I
42 think it's a little too specific, personally, but we can think
43 about it some more.

44
45 **MR. RINDONE:** There is a chapter in the stock assessment reports
46 right now that specifically addresses the combined research
47 recommendations from the different workgroups, and that is
48 included in every assessment, and so that exists already, but

1 creating a keyword, searchable database is not something that we
2 have continued to cultivate or have the ability to just produce
3 quickly.
4

5 **EXECUTIVE DIRECTOR SIMMONS:** Yes, and it's just remembering to
6 search that and remembering to look at it and to remember
7 considering it in the terms of reference, and so I was just
8 trying to make it easy, but we can work on that later. We can
9 work out the best practices later on that.

10

11 **MR. MARESKA:** Okay. Moving along, we kind of looked at greater
12 amberjack, and I don't know if we need to revisit that.
13

14 **DR. FROESCHKE:** One comment. I guess that first new bullet
15 about the new GLM factor, that just seems like a model
16 selection, and that doesn't really seem like a research bit, and
17 so, if you're kind of thinking along those lines, I guess that
18 would be one that I would recommend to remove.
19

20 **MR. MARESKA:** Okay, and so that's under the greater amberjack.
21 Okay.
22

23 **DR. ISELY:** The second bullet on sargassum seems like it would
24 go better under triggerfish than under amberjack.
25

26 **MR. MARESKA:** Ryan, I guess that's a recommendation to remove
27 those two bullets.
28

29 **MR. RINDONE:** It's under triggerfish, also.
30

31 **MR. MARESKA:** Yes, that one bullet is there already, and that
32 was an addition.
33

34 **MR. RINDONE:** That was from the amberjack assessment for looking
35 at sargassum with respect to amberjack.
36

37 **MR. MARESKA:** Okay. Gag. I think that bullet -- This was not
38 added, but I think this is kind of addressed under the ecosystem
39 considerations and management strategy evaluations that Dave was
40 talking about, and so I'm not sure that even needs to be in
41 there, in my opinion.
42

43 **MR. RINDONE:** No mutinous comments?
44

45 **MR. MARESKA:** No comments, and so a recommendation to remove it.
46 We can go on to hogfish.
47

48 **MR. RINDONE:** One second, John. Luiz.

1
2 **DR. BARBIERI:** Just a note that I got here from Julie Neer, just
3 to let us know that SEDAR maintains a master research
4 recommendations list that has every record from every SEDAR,
5 and so it is on the website. They are still doing that, and so
6 that's just an informational thing.
7
8 **MR. RINDONE:** Is it keyword searchable?
9
10 **DR. BARBIERI:** I don't know, but she is probably listening in
11 and will let us know.
12
13 **DR. CALAY:** It sounds like we could work with SEDAR to try to
14 create a better tool that is searchable and that allows us to
15 have some conclusions about whether that has been rejected as
16 essentially not an area of interest anymore or whether we have
17 agreed to work on it or completed the work regarding various
18 recommendations, and so I will try to look at what Julie -- I
19 haven't looked recently at that list, and so we can see how we
20 can use it better than it's currently being used.
21
22 **MR. MARESKA:** Go ahead.
23
24 **SSC MEMBER:** Where do these wish lists go? What is their fate?
25 Is it just a list of this is stuff we would like to have and
26 it's published somewhere and dependent on funding agencies, or
27 what happens?
28
29 **MR. MARESKA:** That's a good question, and I assume they are
30 shared with the NOAA staff, and hopefully they go into -- They
31 are shared with the MARFIN committee and other granting
32 agencies, CRP, and hopefully they review these things and they
33 become part of the priorities, but I couldn't tell you for
34 certain.
35
36 **DR. CALAY:** There's always been a conundrum, because many of
37 these research recommendations do require resources, and so
38 those ones are passed to granting agencies for priorities for
39 MRIP, for example.
40
41 We are kind of at the mercy of who submits proposals and for
42 what species, and so, oftentimes, for example, the research for
43 red snapper is high priority, but some of our other stock
44 assessments are lower priority, and so they don't receive the
45 same kind of attention.
46
47 The ones that relate directly to stock assessment -- We
48 certainly consider those when setting our research priorities

1 for the Sustainable Fisheries Division, and research priorities
2 in our group come with a commitment of time, but no actual
3 dollars for research activities, outside of what can be procured
4 through extramural funding, and so it's a little bit
5 challenging.

6
7 Stock-assessment-specific ones, we typically try to address as
8 we begin the stock assessment process, and it would certainly
9 behoove us to review all of the research recommendations that
10 came from the previous assessment and see which ones can be
11 accomplished, and so that's something I think we need to
12 probably improve upon, to make sure that we're aware of the
13 history of research recommendations that have come out of
14 assessments in various stocks.

15
16 **MR. MARESKA:** All right, Ryan. Where are we at? You're on
17 Section II, and so I think we're on to hogfish at this point.
18 The last three bullets on hogfish were added in this current
19 version, and I assume these came out of an assessment as well.

20
21 **MR. RINDONE:** Yes.

22
23 **MR. MARESKA:** Okay. Any comments or changes or additions? All
24 right. The next species is tilefish, and this species was
25 actually downgraded in its priority code from a B to a C in this
26 recent version. For the South Atlantic and Gulf of Mexico
27 goliath grouper, there were no changes or additions to that
28 species at all.

29
30 Now we're moving on to red grouper, and the last four bullets
31 there are all additions to this version, and so that last bullet
32 of enhanced fish kill reporting, I don't know how practical that
33 is.

34
35 **MR. RINDONE:** This bullet right here?

36
37 **MR. MARESKA:** Yes, and so that's a very vague bullet, to enhance
38 fish kill reporting, and there's no guidance there of how to
39 operationalize that or enhance that, and so, Luiz.

40
41 **DR. BARBIERI:** Well, this is one of those things that probably
42 came out of a SEDAR review panel that was trying to assess the
43 importance of that red tide kill offshore and trying to
44 characterize age and size composition of the fish that were
45 impacted, but not really knowing the complexities that getting
46 this type of information involves, and I don't think it's
47 something that is really practical at this point, that is
48 doable, and that would be a productive way to get a better

1 information for red grouper, really. I would recommend removing
2 it, but I would defer to the rest of the committee.
3
4 **MR. MARESKA:** I agree with you. I am not seeing any objections,
5 and we'll move along. Andrew.
6
7 **DR. ROPICKI:** I don't have any problems with the priorities or
8 the points themselves, the bullets, but it's the priority code.
9 I mean, that's a super important species to the commercial
10 sector, and a C -- I mean, you look at historical landings since
11 the IFQ was implemented, and that is the grouper-tilefish
12 fishery, and so a C might be a little low there.
13
14 **MR. MARESKA:** Okay. I can agree with that.
15
16 **MR. RINDONE:** Do you have a recommendation for a different one?
17
18 **DR. ROPICKI:** B or A.
19
20 **MR. MARESKA:** Well, I think red grouper is in a stock assessment
21 right now, and so --
22
23 **MR. RINDONE:** It's done. You guys get to see it next meeting.
24
25 **MR. MARESKA:** I guess, depending on the outcome of the results
26 of that stock assessment, that would be informative of whether
27 it's a B or an A. Going through the next couple of species,
28 there is really no changes or additions for yellowtail snapper,
29 vermilion, yellowedge grouper, but the South Atlantic and Gulf
30 of Mexico black grouper -- That was actually increased to a
31 priority code of B, but no changes to any of the other
32 information needed there.
33
34 **MR. RINDONE:** I increased it from a C to a B because of what
35 went down with the last data workshop for black grouper. That's
36 a very brief summary, but there are multiple outstanding issues,
37 and we've gone from a known to an unknown stock condition, as we
38 discussed during this meeting.
39
40 **MR. MARESKA:** Okay. Moving right along to Atlantic and Gulf of
41 Mexico king mackerel, Priority C, no changes, and so, for the
42 rest of these species, there has been no changes or updates to
43 any of these.
44
45 Then to Section III, the economic and social recommendations,
46 those were pretty status quo, except for Item Number 4, and I
47 think this was a change. Part of the last sentence there, under
48 Item Number 4, is, as changes in fishing practices, non-quota

1 holders following implementation to catch share programs, and
2 there is some comments there. Ryan, do we need to discuss those
3 at all, or is this more of a --

4
5 **MR. RINDONE:** Ava is neck deep in this particular area, and so I
6 will let her comment further, if she wants. Generally, for how
7 this could have an impact, when an individual was able to fish
8 for a certain species commercially, and then the establishment
9 of the IFQ program, for program reasons, results in their not
10 having allocation for a particular species, does that cause a
11 shift in their fishing effort, and does it cause a decrease or
12 an increase in their fishing effort?

13
14 How is that all affected, and, that characterization of effort,
15 whether it goes up or down or whether there is effort shifting
16 to other species is all important for the assessment of those
17 other species that that particular fisherman, or group of
18 fishermen, in this case, since it would apply to all fishermen
19 that were excluded from the program, how that shift in effort
20 affects those other species.

21
22 **MR. MARESKA:** I don't see it generating any questions, and so I
23 think we'll just move along.

24
25 **MR. RINDONE:** Did I characterize that appropriately?

26
27 **DR. AVA LASSETER:** I was reading while you were doing that, but
28 I'm sure you did. If not, we'll follow-up later.

29
30 **MR. RINDONE:** Good talk.

31
32 **MR. MARESKA:** Yes, and then the last sentence in Number 5 is
33 develop scales to use socioeconomic indicators as triggers for
34 evaluation of fishery management decisions, and so I am not sure
35 what kind of scales and what socioeconomic indicators
36 specifically they are looking for.

37
38 **MR. RINDONE:** This relates more to discussions about reviews for
39 allocation and determining -- Because we have been asked to
40 review our sector allocations on a periodic basis, and the
41 council is currently working to develop a plan to be able to do
42 that, and with certain intervals by species, and so develop
43 scales using socioeconomic indicators as triggers for fishery
44 management decisions, one of those being allocation, and so this
45 is just part of that, and also fishing zones in the past.

46
47 Like with king mackerel, we have changed the allocation between
48 commercial fishing zones in the Gulf to more reflect the needs

1 of the fishermen within those zones, balancing abundance against
2 industry need for access to the fishery, and so this broadly
3 swats that need.
4
5 **MR. MARESKA:** Okay. Well, since I guess the council added this,
6 then --
7
8 **MR. RINDONE:** Staff added it based on obligations of the
9 council.
10
11 **MR. MARESKA:** Okay. Any comments on that? All right. Moving
12 right along to the last item, Item Number IV, and so the
13 ecosystem-based management recommendations, and that should have
14 a scale for priority codes, I guess A through C there, and that
15 needs to be added in.
16
17 **MR. RINDONE:** Before we get there, Item 10 that Kai had
18 requested be added under economic and social considerations.
19
20 **DR. LORENZEN:** It would be an A, obviously.
21
22 **MR. RINDONE:** All right, and so now on to Section IV. Kai's
23 addition was to evaluate the effectiveness of communication and
24 stakeholder engagement approaches, including opportunities for
25 stakeholders to provide input to stock assessment and management
26 processes and barriers to participation, effects of engagement
27 opportunities on stakeholders, perceptions of management
28 processes, and opportunities for meaningful participation and
29 related issues.
30
31 **MR. MARESKA:** All right. The last one is the ecosystem model
32 development, and so this is specific to the models that are
33 currently being used, and so that got a low priority, and I
34 guess they're thinking that the models are well developed, but
35 they just need more data at this point, and so I guess, until we
36 get better data, we can't improve the models.
37
38 **MR. RINDONE:** That is the general sentiment, and that can be
39 noted directly in that line under model development, if that's
40 something that you guys think is appropriate, or you can
41 reevaluate the priority code, and you have options.
42
43 **Mr. MARESKA:** That wraps it up. If there is any more questions
44 or comments in general about the whole priority list -- No? I
45 guess we can turn it back over to Joe.
46
47 **CHAIRMAN POWERS:** Thank you very, very much for doing this. the
48 lunch is here already, right?

1
2 **MR. RINDONE:** Yes.

3
4 **CHAIRMAN POWERS:** Then this would be a convenient time to take
5 one half-hour for lunch, and so we'll come back in thirty
6 minutes, which is 12:18.

7
8 (Whereupon, the meeting recessed for lunch on July 31, 2019.)
9

10 - - -

11
12 July 31, 2019

13
14 WEDNESDAY AFTERNOON SESSION

15 - - -

16
17
18 The Standing & Special Reef Fish, Mackerel, and Socioeconomic
19 Scientific and Statistical Committees of the Gulf of Mexico
20 Fishery Management Council reconvened at the Gulf Council Office
21 on Wednesday afternoon, July 31, 2019, and was called to order
22 by Chairman Joe Powers.

23
24 **SCOPE OF WORK: GRAY SNAPPER OPERATIONAL ASSESSMENT**

25
26 **MR. RINDONE:** As usual, if anyone doesn't like anything that's
27 written, John did it. This is our operational assessment scope
28 of work for gray snapper that you guys have up before you right
29 now.

30
31 **DR. FROESCHKE:** That's right.

32
33 **MR. RINDONE:** This is our operational assessment scope of work
34 for gray snapper that you guys have up before you right now,
35 and, at the last SEDAR Steering Committee meeting, the
36 cooperators for SEDAR, which are the councils and the
37 commissions, talked with the Science Center about the best way
38 to approach developing these scopes of work for the assessment,
39 and the goal is to try to have the scope of work approved and
40 submitted to the Science Center two years ahead of when the
41 assessment is scheduled to begin, and it just helps with all of
42 the planning things that happen on the frontend that most people
43 don't see or hear about, but they are many, and they are time
44 consuming.

45
46 Just as a refresher, the way that we're doing things now, with
47 the research track and the operational assessments, is to
48 develop this scope of work, which is kind of like a precursor to

1 the terms of reference, and this is where we put our wish list
2 together and all the things that we want to have happen, what
3 terminal year we want to use, and whether we think that this
4 particular assessment needs in-person workshops or webinars are
5 fine, just to kind of lay everything out there.

6
7 I have provided these to you guys in the form of the terms of
8 reference, because it's what you're using to seeing, and,
9 frankly, it's what I'm used to seeing too, and it just provides
10 for a known structure to move through this, and it will also
11 make it easier on SEDAR when they go to create terms of
12 reference for the assessment, which you guys will ultimate
13 approve, and it's already in the same format.

14
15 For this particular one, for gray snapper, again, it's an
16 operational assessment, and we have a listed terminal year of
17 2019, and so the terminal year for the data will be 2019, and,
18 if you look through, in the second bullet, you can see all the
19 things that we're asking for. In the interest of time, I will
20 not read them all. Mr. Gill.

21
22 **MR. GILL:** Thank you, Ryan. My question relates to the first
23 bullet under 2, and, if you look at the schedule, it is
24 scheduled to start, this operational assessment, sometime in
25 2021, and, as yet, it's not determined when in 2021, and so my
26 question relative to the first bullet relative to red tide is
27 why not include red tide impact from 2019, 2020, and 2021, as
28 appropriate, relative to, for example, projections, much as is
29 being done in red grouper?

30
31 **MR. RINDONE:** Thank you. The only reason why I didn't put that
32 in there is we don't know that there will be an event of
33 measurable magnitude during those years. If there is, we can
34 certainly send the Science Center a letter saying, hey, some
35 more of this has happened, and, if it's possible to consider
36 this, we would appreciate it, but, again, the terminal year of
37 data is going to be 2019, and so, anything beyond that, we could
38 try to incorporate in some way into projections, if it's
39 possible to do so, but the expectation at this point for this
40 assessment should be that the terminal year for things to be
41 considered would be 2019.

42
43 **DR. NANCE:** I would just put 2019 on red tide. I mean, I don't
44 -- If we're going to have the data through 2019, then
45 everything, whether red tide or whatever, should be through
46 2019.

47
48 **MR. RINDONE:** Shannon.

1
2 **DR. CALAY:** I am concerned, and, in our concept of research
3 track assessments and operational, the operational assessment
4 was meant to essentially be an update, and the schedules are
5 very short, and there, in most cases, is no in-person data
6 workshop, and our impact on the data providers is meant to be
7 small.

8
9 I am seeing here a lot of requests for additional work that
10 would have to be done by data providers throughout the
11 Southeast, and new research that would have to be done to
12 incorporate that information into the stock assessment, and so,
13 if this entire list is forwarded to the statement of work for
14 operational, this is much closer to a benchmark or a research
15 track assessment than an operational assessment.

16
17 Furthermore, I don't know how gray snapper is a priority
18 compared to some other stock assessments that we might recommend
19 updating first, and so I'm not sure how the council, at this
20 point, is prioritizing their list of assessment needs.

21
22 **MR. RINDONE:** I can speak to the prioritizing aspect of that.
23 At the culmination of the last assessment, which was SEDAR 51,
24 gray snapper was projected to have been undergoing overfishing
25 for several decades, and the overfished condition was dependent
26 largely upon the ultimate status determination criteria that
27 will be codified through Amendment 51, which is slated for final
28 action at this upcoming council meeting.

29
30 The overfished condition at the time, combined with -- Sorry.
31 The overfishing condition, combined at the time with the
32 uncertainty about the overfished condition, made gray snapper a
33 priority from an assessment standpoint, and it's my
34 understanding that, from subsequent projections, we have learned
35 that we are out of that overfished condition under the
36 recommended status determination criteria in Amendment 51, and
37 overfishing is not thought to be presently occurring, but it's
38 still -- It's a ubiquitous, but important species, in the Gulf,
39 and so it remains a priority for the council since its
40 assessment, and so, unless Paul wants to weigh-in a different
41 way, that's the story.

42
43 **DR. MICKLE:** I will try. I just ate a hot pepper, but, yes,
44 that's correct. Ryan has been conveying on the council that, if
45 you change the order of stock assessments in the next year, or
46 even the year after that, it affects everything, and we all know
47 that, but, just to echo that point from Ryan, it has definitely
48 become a priority, gray snapper, which brings in range

1 expansions and things that the council has discussed, and I
2 would love to have some discussion, if we have time at the end
3 of the meeting, to talk about how stock assessments could
4 potentially look at range expansions in a more quantitative way,
5 but that's a different discussion, but just to agree with Ryan
6 that it has been a priority, and every state has shown, or at
7 least made comments, that it's a high priority in their state,
8 and it has held, and it holds its position on the SEDAR schedule
9 where it presently is, and it's always fun when Ryan brings all
10 this up, because half the states want to change the order, but
11 this one of the species where they haven't challenged moving it,
12 ironically or not. Take it however you want.

13
14 **MR. RINDONE:** To expound a little bit further, we have been
15 trying to reiterate to the council that any assessments that are
16 scheduled within the next two years are, barring some drastic
17 emergency, are off limits to change, because of the effect that
18 that has on the SEDAR schedule and with trying to get all of the
19 data organized for those assessments that fall within that time
20 period.

21
22 If there are things on here that just strike you as we simply
23 can't do that within the scope of an operational assessment,
24 let's definitely identify those and consider how to move forward
25 with them.

26
27 **DR. CALAY:** This is meant to be an operational assessment,
28 according to the header of the document, but this is reading
29 more like a research track assessment, and certainly we can meet
30 with our data providers and see if any -- What here is possible,
31 given current -- Within an operational assessment and within the
32 calendar of other SEDARs that are scheduled, but most of this
33 research is not necessarily -- Let's put it this way.

34
35 My team depends on data collected by Panama City and by other
36 partners, the states for example, and so some of this may be
37 work that is in progress that could be evaluated in the context
38 of an operational, and some of this may not be currently in
39 progress at all, and so it's certainly -- If you want stock
40 assessment throughput and efficiency, then operational
41 assessments are meant to be updates. If you want to continue to
42 essentially do research track/benchmark assessments, our
43 throughput will be reduced substantially.

44
45 **MR. GREGORY:** I am little confused. The three major items there
46 that it says consider, it's simply a listing of what was in the
47 last assessment, and it's not saying research them or anything,
48 and so, I mean, if that was taken out, you would still use those

1 parameters with an update, right? Then I have another question.

2
3 **DR. CALAY:** I think it becomes -- If you write "consider", and
4 we don't consider it, because no new information is available,
5 is that a sufficient response?

6
7 **MR. GREGORY:** Yes.

8
9 **DR. CALAY:** All right, because, in proceedings that involve CIE,
10 that is not always a sufficient response. Sometimes they
11 express displeasure at terms of reference not met, and so it
12 depends on how rigid this statement of work is to be
13 interpreted, because there may be things here that, when we get
14 around to the operational assessment, no new information is
15 available to us, and so we can't consider it further.

16
17 **EXECUTIVE DIRECTOR SIMMONS:** Something you brought up earlier,
18 Shannon, was we could request, under this new regime, an
19 operational assessment, and we could request an in-person
20 workshop, because this is our scope of work, which I guess we
21 would follow up in more details, perhaps, later with terms of
22 reference, but that is an option, and so I guess, if this
23 committee and the council wanted to do that, we would request
24 that at the September SEDAR Steering Committee meeting, and is
25 that useful, and would that help some of this, as far as getting
26 the data providers together to resolve some of these potential
27 issues?

28
29 **DR. CALAY:** Well, it certainly is useful to have in-person
30 workshops. The problem we're facing lately is diminishing
31 budgets to attend workshops, and so, yes, you can have the
32 workshop in Miami, and my staff and Dave Gloeckner's staff can
33 attend, but then Panama City has to travel, et cetera, and so
34 there is no way around that in-person workshops are costlier.

35
36 That being said, another fear, or not really so much a fear as
37 experience, is that, when you introduce these changes, sometimes
38 it is necessary to reconsider model parameterization and to
39 rerun sets of diagnostics to re-tune the model, and I think that
40 I am still concerned about -- Clay has made some progress with
41 the councils to try to say that the way to improve throughput,
42 and he has given some numbers on what he thinks the improvement
43 would be, is to introduce this operational assessment.

44
45 If we continue to make these essentially standards or benchmark
46 assessments, we will not realize that increase in throughput.
47 It just won't happen, and it's impossible, and so it's really a
48 matter of do you want more frequent information from stock

1 assessments to manage fisheries or do you want less frequent
2 information that we believe to be more realistic, in terms of
3 biological and fisheries knowledge?

4
5 I think that it's actually important to manage fisheries with
6 frequent information and then create some kind of a calendar for
7 when we would conduct research track assessments to improve the
8 state of knowledge, and those should happen relatively -- As
9 frequently as we can possibly do that, but, if this continues
10 and operational track assessments remain such a burden, we won't
11 realize this increase in throughput that Clay has been
12 suggesting. It will be business as usual, five assessments a
13 year, conducted Gulf and Caribbean.

14
15 **EXECUTIVE DIRECTOR SIMMONS:** I think, from my perspective, and
16 just starting to sit in on the Steering Committee meetings, that
17 this new process is a bit confusing as to what we can ask for
18 under these new types of operational assessments, moving away
19 from a standard, and so we're going to ask for everything, of
20 course, upfront that we can, that you guys may be able to
21 accommodate, and so, if we could get more feedback, perhaps, on
22 these scopes of work before we have to have a final product
23 submitted to SEDAR, I think that would be really, really
24 helpful, from my perspective anyway, because, right now, I think
25 it's a little bit unclear what we can ask for within this new
26 process.

27
28 **MR. RINDONE:** Mr. Chair, if I can jump in. To expand on what
29 Carrie said, the way that we've understood this process to go is
30 that we draft up a scope of work, and we present it to you guys
31 and kind of beat our heads together about it and figure out what
32 you want to do, and then it gets passed along to the analytical
33 body, in this case the Science Center, for gray snapper, which
34 says these things are feasible and these things are not, and
35 it's a multi-pronged, multi-entity negotiation process, until it
36 gets to a point where it's ironed out.

37
38 It may be that we need to do with the Science Center what we
39 test drove with FWC for hogfish, which was I nagged Luiz about
40 it, and then we got the hogfish scope of work to a point where
41 the analytical body, in this case FWC for hogfish, said that,
42 yes, we can do these things this way, and so maybe it's just a
43 matter of budgeting time ahead of time to try to work through
44 those sorts of things and make our wish list more practical.

45
46 I did want to reiterate though that the things in here that say
47 to consider SEDAR 51 recommendations for, and then insert the
48 rest of it, those are just straight from the last assessment.

1 If those are things that there hasn't been any progress made,
2 and there is not projected to be any progress made, then it's
3 summarily considered, and the review body for all operational
4 assessments is the SSC.

5
6 It's not like there is an additional CIE desk review or anything
7 like that that could deliver a finger-wagging because they
8 didn't think that a term of reference was met. If the
9 understanding of this review body, which is responsible for the
10 determination of this operational assessment, says, if you
11 looked at it and you can't do it, then you considered it, that's
12 good enough, and, to the Science Center, there hasn't been any
13 objection to that interpretation. Doug.

14
15 **MR. GREGORY:** In an attempt to move on, one of the things you
16 have here, Ryan, is that the SEDAR 51 recommendation for
17 reproduction -- You said use female weight-length relationship
18 with the size at which 50 percent of individuals are sexually
19 mature, set at 300 millimeters fork length.

20
21 The stock assessment actually said the 50 percent maturity level
22 was at 253 millimeters fork length, and so that needs to be
23 changed. They did say, in the assessment, that 300 was -- It
24 was a more significant contribution to the spawning stock above
25 300 millimeters and that it -- Consequently, 300 millimeters
26 fork length is a more accurate estimate of maturity for gray
27 snapper.

28
29 I don't understand that logic. I mean, if that's not L50 -- I
30 think they took a leap of faith there, and so, to me, maturity
31 is at L50 and not some level above that that I am more
32 comfortable with, and I have another question about this scope
33 of work, also.

34
35 **MR. RINDONE:** Okay. To Doug's point, the life history working
36 group looked at batch fecundity at size and age, and anything
37 basically 300 millimeters, the reproductive contribution of
38 individuals, although sexually mature, below that size was
39 inconsequential in terms of its contribution to reproduction for
40 the stock, and so that's why they recommended 300 millimeters be
41 the reference point at which size at 50 percent maturity be
42 measured, and so, basically, below that, it's almost as if it's
43 zero.

44
45 **MR. GREGORY:** That's true with all of these snappers, and so, to
46 me, it's irrelevant, but the other issue I have, or not an
47 issue, but a request that I have is that the last item under 3,
48 where it says "provide yield streams", I would like to add

1 "provide yield and spawning stock biomass streams". Again, I am
2 interested in seeing how the population is responding and not
3 just how yield is responding. Thank you.

4
5 **DR. CALAY:** Just noting that a lot of this information is
6 already available, and so, I mean, in fact, it's already in the
7 reports that we've produced, and so there is a mixture here of
8 things that have already been done and things you are
9 recommending be done, and that's fine.

10
11 **DR. NANCE:** I guess the key is that an operational assessment
12 should be what we consider was an update, and there can't be
13 model changes and anything else, and I think we've got here kind
14 of a mixture of things that have already been changed and things
15 that we want to see, and I think we need to keep it at an
16 update, and operational should just be new data into the model.

17
18 **MR. GREGORY:** I didn't go to the Steering Committee this year,
19 but, in previous years, the guidance was that an operational
20 assessment can be a standard or an update, depending on what's
21 needed, and, in my mind, it should have been negotiated between
22 the council staff and NMFS even before it came to us, so we
23 wouldn't have that type of conversation, or it occur at the
24 Steering Committee level.

25
26 I just wanted to point out that it could be a standard, or it
27 could be an update, and a large part of that has to do with
28 workload, as well as the need of the council, and I could
29 certainly understand the question as to why the council wanted
30 to do this two years later, when we just had a benchmark
31 assessment, unless it's along the lines of a research track,
32 where we do an operational immediately after research track.

33
34 **MR. RINDONE:** To speak to some of the conversations at the
35 Steering Committee level, and Carrie can chime in too, when we
36 were talking about gray snapper specifically, some of the things
37 that stuck out were what had to be done during the assessment to
38 address things like commercial discards and the issues that
39 arose with trying to determine the impact of the shore mode for
40 the private recreational component of the assessment and some
41 other issues that we were more data limited than we are with
42 some of our other snapper species.

43
44 Those issues are noted within the scope of work, but they're
45 also the reason why an in-person workshop was requested for this
46 particular assessment, was to provide a forum to discuss some of
47 these more difficult problems that were identified as part of
48 SEDAR 51.

1
2 **DR. CALAY:** I agree that, if we were to put together a statement
3 of work -- I mean, I think Jeff and I would both agree that we
4 had important concerns about the discards, and certainly the way
5 the model fit to the discards, and there has been a new
6 methodology for commercial discards, which would change
7 basically our perception of discards, and so certainly that's
8 something we would have also proposed.

9
10 There was also some concern about whether there was additional
11 information available from the age composition data that we did
12 not include, and so that would certainly also be an area that I
13 would be interested in looking at.

14
15 Where I start to see more concerns are these very specific
16 recommendations, such as bound steepness between 0.81 and 0.99
17 based on the latest update assessment of mutton snapper, and I
18 have no idea if that's a reasonable range of steepness, and
19 there is nothing there about the shape of that prior, and is it
20 a prior based on -- Basically, is that an uninformative prior,
21 or is that an informative prior, and, if it's informative, what
22 is the shape of the distribution?

23
24 I don't think it's necessary -- Those seem unnecessarily
25 restrictive, to me. I mean, if really what you're concerned
26 about is looking at estimation of steepness or in estimating
27 steepness with a prior, those are certainly things that we could
28 consider, but this looks like marching orders, which always
29 makes me very uncomfortable.

30
31 Then, also, there is some work here that would involve our life
32 history teams, and I just want to make sure that they are able -
33 - That, if this is the priority of the council, that we make
34 sure that we have the time in the schedule for them to make
35 these sorts of investigations, because remember that we rely on
36 data providers, and we don't actually do this work. Jeff and I
37 don't actually do some of this work. We rely on the data
38 providers, who actually analyze the data and make
39 recommendations to us.

40
41 **DR. CHAGARIS:** In a previous meeting, I was really encouraged to
42 hear that, when you were talking about these operational
43 assessments, that they were going to be fairly stereotyped, and
44 you were going to use some R markdown, or you were going to be
45 developing that, and I thought, oh, that seems great, and so it
46 seems to me that there was a bit of miscommunication, or maybe
47 lack of communication, about the intersect between sort of what
48 you're envisioning, in terms of the deliverables of what that

1 document would look like and probably most efficient as a
2 stereotyped output, and then these would seem fairly
3 prescriptive and idiosyncratic, and so was I -- Am I
4 understanding the sort of vision of the operational assessments
5 that you had?
6

7 **DR. CALAY:** The vision is we would essentially use research
8 track assessments to study model structure and to pin down,
9 through a thorough review, what we propose to be the new
10 operational model. That would be essentially about an eighteen-
11 month to two-year, depending on the species, process.
12

13 Once we got that operational model in place, we would
14 essentially propose to increase throughput by doing strict
15 updates of those operational models frequently, and that we have
16 already actually have staff onboard now who are creating our
17 markdown documents, and that will essentially automate the
18 production of these reports. That is the vision.
19

20 The tricky bit is we're still in an interim process, where some
21 of our assessments we're not comfortable that they're completely
22 operationalized, and so some of our assessments are currently on
23 the calendar for research track assessments, to be conducted in
24 the near future, and some are not, and so gray snapper does not
25 -- We had a benchmark just last year, I think it was, or two
26 years ago now, and we have not had an official research track
27 assessment, but I guess my opinion, personally, about gray
28 snapper is there are some areas that could be improved, that are
29 not a heavy lift, but then, in general, a complete benchmarking
30 procedure for gray snapper right now would not yield much better
31 data than what we had two years ago.
32

33 There has not been a lot of research conducted on red snapper in
34 the last two years, and so I think there are some good points
35 here that we can put in a statement of work, but I would hope
36 that we're moving towards a time when the operational
37 assessments will look much more like updates than like
38 benchmarks.
39

40 **CHAIRMAN POWERS:** John.
41

42 **DR. FROESCHKE:** One thing I would hope, just as a note, would be
43 helpful is, under Item 3, if we could get just sort of a
44 notation of the units of output of the assessment, and so, the
45 recent one, the quota was originally established in MRFSS, and
46 the output was in MRIP units, and I suspect there will be
47 another change in this one, and the outputs are likely to be
48 done in the FES units, and so there will be a change in that,

1 and it's very difficult for us to understand that and figure out
2 the directionality of changes and things.

3
4 **MS. SCHIAFFO:** Julie Neer is on the line, and she wants to --

5
6 **DR. CALAY:** You're not alone. Frankly, I am trying to wrap my
7 head around how we're going to do all of this. The best
8 practice guidance right now from NOAA suggests that we'll be,
9 for at least some period of time, using FES as the best
10 available science, and without the ability to do all the
11 intensive state-based calibrations that would be possible
12 perhaps in the future, but we're going to have to convert that
13 currency somehow at the end of a stock assessment to be useful
14 for management, and, frankly, I haven't crossed that bridge yet,
15 but we'll get there.

16
17 I imagine that we'll be providing the outputs in FES for the
18 stock assessment report, and the management advice, the OFL and
19 ABC, in the units you're going to use to manage the stock. How
20 we're going to get there is probably not complicated, but I just
21 have not -- I haven't tried it.

22
23 **DR. BARBIERI:** Just to that point, John, this is going to be, I
24 guess, a very relevant question for this SEDAR Steering
25 Committee webinar that will be coming up on August 26 that is
26 going to unveil the white paper and discuss those types of
27 things, and, by the way, Julie Neer has been emailing some
28 people saying that she is available to weigh-in on some of this
29 and is trying to get through.

30
31 **MS. JULIE NEER:** I just wanted to quickly address the confusion
32 about what an operational is under our framework. The guidance
33 we received at the Steering Committee is what Doug and Carrie
34 have said, that an operational can range from a basic update,
35 simply add additional years, up to the more standardish type of
36 assessment, where we include additional analysis and add new
37 data streams.

38
39 The reason we have that flexibility built into it now is
40 because, as Shannon said, most of our assessments have not gone
41 through a research track. In fact, none of them have yet, not a
42 single one, and we're starting the first one now, and the
43 reality is we will probably never do all of them through
44 research tracks until maybe fifteen years down the line and we
45 never do anything new, because they take a significant amount of
46 time.

47
48 In the interim, if we have assessments that we have a benchmark

1 for, and we were very happy with that benchmark, we can go,
2 okay, this is an operational which is towards the update scheme,
3 which is what we're doing for greater amberjack in 2020 for the
4 Gulf.

5
6 On the flip side, if we have an assessment, such as gray
7 snapper, where people had greater concerns, and the review panel
8 and the CIE had concerns of things they would like to be
9 examined, and the Science Center still has things that they
10 would like to examine, those things are appropriate to put in
11 this statement of work.

12
13 The reason we are doing these statements of work a year to two
14 years out is to know what the data lift for our data providers
15 will be, and that's why we're asking for this so far out. Every
16 cooperator is turning in statements of work for all of their
17 projects, and so everyone is going to look at it. Then they
18 have to look -- Clay and the team need to look overall, what
19 everybody is requesting with regard to data needs, and they will
20 determine whether everyone gets everything they're asking for.

21
22 I think this is an appropriate way to go forward with this
23 statement of work with regard to what the council would like to
24 see, except for that define steepness between this and this, and
25 that is a very kind of marching order one, and I agree that
26 perhaps rephrase that to investigate steepness, but these
27 requests I think are in the vein of what a statement of work
28 should be.

29
30 Then, once they have all the statement of work for all the
31 assessments that are going to happen in 2021, we will then get a
32 chance, and Clay and the Science Center will feed back to the
33 Steering Committee and say that you can have everything, but you
34 can't do quite so much on this assessment, perhaps, and that's
35 why we're doing this so far out, so that we can reach out to the
36 data providers, so they have a year to two years in advance to
37 know what the data lift will be, and we'll know whether we can
38 accommodate all of it or not.

39
40 This is an assessment for 2021, and that's why we're doing these
41 so far in advance, and so, from our perspective of what the
42 statement of work is supposed to represent, I think this is
43 appropriate. The exact numbers, or whether everyone is going to
44 get every single thing they request in the statement of work are
45 things that have to be negotiated, certainly, but I think you
46 should ask for what you want, so the Science Center has an idea
47 of what you would like to see, and they can determine whether
48 they can accommodate all of that or not.

1
2 Operational assessments are not currently just updates, because
3 we have work that has to still be done on a variety of
4 assessments. Others, they can be simple updates, more towards
5 the update realm, and you're doing that, and so I just wanted to
6 try and clarify where, in general, the thinking was, and this is
7 true for the South Atlantic as well, and we have some that are
8 coming through that are towards basically an update, and we have
9 other assessments that are requesting additional information or
10 analysis, and they're more towards the standards, but they're
11 still all called operational updates.

12
13 Yes, I agree also with Shannon that, ultimately, we would like
14 to get everything more towards the update realm, so we can get
15 more work done and a greater throughput, but we're not quite
16 there yet, and so I hope that makes sense. Thank you.

17
18 **DR. CALAY:** One additional thing to keep in mind is that the
19 operational assessments right now do not have a formal review
20 process. These are reviewed by the SSC, and so these might be -
21 - These might be changes of sufficient nature that they require
22 additional levels of review, and the operational track does not
23 provide that, and so this would be a product that would be
24 essentially done internally to the Science Center, with some
25 potential for panels to meet, and there is no CIE review
26 associated with this.

27
28 I just also wanted to point out that Julie is correct that we
29 have not completed any research track assessments yet, but the
30 old terminology for research track was benchmark, and we just
31 did this as a benchmark assessment two years ago, and so there's
32 nothing magical about a research track. We rebranded the name.

33
34 **MR. RINDONE:** If it pleases the committee on this, we can bring
35 this back to you guys in September, and we'll conference more
36 intimately with the Science Center about this and get a bearing
37 on how to proceed with some of these things that are particular
38 points of consternation.

39
40 **CHAIRMAN POWERS:** I think some of the discussion is being lost
41 on us, because we're not involved in the day-to-day sorts of
42 decision-making that has to go on, and so it's probably best
43 that that's discussed amongst those people that do get involved
44 day-to-day, but you had a point?

45
46 **DR. CHAGARIS:** A couple of things. First of all, I think we're
47 at a point now where there is no such thing as a strict update
48 assessment, because the data streams are all changing underneath

1 us, and so I think the SSC needs to recognize that as we go to
2 update and recreational catch time series that involves a lot of
3 work.

4
5 The second thing is I think that we need to try to accommodate
6 the Science Center as much as possible for these operational
7 assessments, to allow this vision of throughput to materialize,
8 and so I would encourage Shannon -- You guys to work together to
9 get these scopes of work where it's feasible for you guys.

10
11 Then the last thing is to a point that Shannon made before about
12 whether we want more frequent and less certain stock assessments
13 or less frequent and maybe more higher-quality stock
14 assessments, and that's an actual tradeoff that could be
15 evaluated through management strategy evaluation, and so maybe
16 that could be another research recommendation to go into the
17 list, to determine what would be the optimum frequency and
18 target precision level for stock assessments.

19
20 **CHAIRMAN POWERS:** To that point, Rick?

21
22 **DR. METHOT:** Starting first with exactly that point, and thanks
23 for bringing it up, doing that kind of evaluation is exactly
24 what we envision with the prioritization process, in order to
25 establish what is the right frequency for updating assessments,
26 taking into account factors exactly like that, and so I'm really
27 glad that you brought that up.

28
29 As I look as an independent at this list for this particular
30 species, the thing that I would think about is to break it into
31 things that are either minor tweaks that would be just part of
32 the new model run for this species that are going to be really
33 small changes and things that are going to require some sort of
34 a comparison, which means model runs with it and model runs
35 without it, and a documentation of that change, basically a
36 sensitivity analysis, which things which require a sensitivity
37 analysis, and I see several like that.

38
39 I also see several that look like new studies, like evaluate new
40 ways of doing gear selectivity for this fleet, and, when I see
41 that for a particular species, there is a whole bunch of species
42 that probably should be looked at at the same time in the same
43 basic way, and so, as you look at projects that you need to have
44 in your region, I think trying to find efficiencies for tackling
45 them in a multispecies way is a good thing to do, and, for
46 something like this, there is quite a bit in here that looks
47 like it's going to require some comparison kind of work, and
48 that gets a bit beyond what was expected as the operational

1 assessments.

2
3 I think, nationally, the research track and operational
4 assessments was very strong in our stock assessment improvement
5 plan update, and we certainly were encouraging people to move in
6 this direction, but we were seeing the operational as really a
7 pretty slim operational and not something that included this
8 much, and so I think you need to partition it down.

9
10 **CHAIRMAN POWERS:** Thank you. Kai.

11
12 **DR. LORENZEN:** A question of clarification. My understanding
13 was that the research track would not lead to projections and
14 status determination and so on, and so there's a big gap between
15 operational and research, right?

16
17 **DR. CALAY:** Yes, you're right, Kai, and what we were envisioning
18 is that we would schedule the operational immediately following
19 the research track, and this is in fact what we have done for
20 the two that are currently on the calendar, and so we literally
21 finish the research track and begin the operational, and the
22 timeframe for the operational is very short. It's just an
23 execution of the decisions of the research track assessment.

24
25 **DR. METHOT:** One more thing I would add is that an operational
26 assessment is essentially the continuity run from the previous
27 assessment approach, with and without the one or two more years
28 of data added on, and so it really should be a very simple thing
29 to implement once you have the machinery in place.

30
31 **DR. LORENZEN:** Except that the data streams will have changed,
32 as you've pointed out, for the record.

33
34 **CHAIRMAN POWERS:** Doug.

35
36 **MR. GREGORY:** Ryan, if this is coming back to us in September,
37 would you provide us some more information on the size at
38 maturity, as to what was actually used in the assessment, and
39 maybe we could ask, if it doesn't bother the NMFS people too
40 much, for a sensitivity run for the two different size at
41 maturity, and it got my attention because the 300 millimeters is
42 basically twelve inches, and the 250 is ten inches.

43
44 The people that originally studied gray snapper in the Florida
45 Keys, back many years ago, determined that maturity was eight
46 inches, and that's a disparity, from eight to ten to twelve, and
47 so it could have an impact on conclusions, and maybe, if we
48 could see the data, the report, from the last assessment in our

1 briefing materials and have a discussion and come to a
2 consensus, then that would be fine with me.

3

4 **MR. RINDONE:** I can definitely provide that. 253 millimeters
5 was what was used as the L50 in SEDAR 51, and, as far as running
6 a sensitivity to see what the difference would be between using
7 253 and 300, there is a lot that that changes, and I think
8 that's probably beyond just a -- It's not? Okay.

9

10 **DR. CALAY:** I'm sorry, but I was just looking at the actual
11 output of the stock assessment, and I don't know what it says in
12 the report, and I haven't got that memorized, but we used 50
13 percent maturity at thirty centimeters in the stock assessment,
14 and it's a knife-edge function, 50 percent maturity at thirty
15 centimeters.

16

17 **MR. GREGORY:** That's 300.

18

19 **DR. CALAY:** Yes.

20

21 **MR. RINDONE:** It says 253 in the --

22

23 **DR. CALAY:** I mean, I have the picture of it.

24

25 **MR. GREGORY:** I always felt that gray snapper and yellowtail
26 snapper were quite productive, because they mature at eight
27 inches, and we don't catch them until they are twelve, and so,
28 to me, this makes a -- This is a four-inch difference in size at
29 maturity from what the historical literature shows, and it may
30 have a function to do with where the data was collected from
31 Panama City versus the original study was done in the Florida
32 Keys, and there may be a difference in maturity geographically.

33

34 **DR. CALAY:** My recollection is that there was a change in the
35 way we parameterized maturity, but that was based on a
36 conversation with Panama City, and my belief is that we executed
37 the recommendation of the Panama City Laboratory. I mean, Jeff
38 was the one who communicated -- The length of maturity, my
39 recollection is that we went through some iterations on that,
40 but I think what's in the stock assessment control file is the
41 recommendation from the Panama City Laboratory. That's my
42 belief, and let's put it that way. It's always possible that an
43 error was made, but that's my belief.

44

45 Also, there is a recommendation here about the CV on old and
46 young fish, but I'm looking at the control file, and we did have
47 information on that, and it is incorporated in the stock
48 assessment control file, and so there are several things here

1 that may already have been addressed. We can look at it in more
2 detail, and we don't have to take any more time, but the Science
3 Center can look at this and parse out what can be done in a
4 short operational time schedule and what would take more time
5 and how much more time it would take.

6
7 **CHAIRMAN POWERS:** Thank you. I think that's kind of the way to
8 go. On this, do you have any more, Ryan? Good. Thank you.
9 Then we can move to what is hopefully not a similar discussion
10 about hogfish.

11
12 **SCOPE OF WORK: WEST FLORIDA SHELF HOGFISH BENCHMARK ASSESSMENT**

13
14 **MR. RINDONE:** Thank you, Mr. Chair. We took a little bit
15 different approach with hogfish that we'll adapt and use with
16 the Science Center, it seems like, moving forward with
17 assessments where the Science Center is the analytical body, and
18 Luiz and I and Dustin bounced this scope of work around prior to
19 bringing it to you guys, and so what you see is the joint effort
20 of those conversations for the benchmark assessment scope of
21 work for west Florida hogfish.

22
23 The reason why this is being requested as a benchmark assessment
24 is this is a framework that is amendable to how FWC plans to
25 conduct the assessment, as opposed to a research track, and so
26 this will yield management advice at the end, but it's a
27 considerable scope of work, given the outcome of the previous
28 update assessment for west Florida hogfish, where the
29 uncertainties in the model grew quite a bit. Of course, that's
30 an overgeneralization, but -- If you guys want to thumb through
31 this, and I will answer any questions or anything, but I won't
32 read through it.

33
34 **CHAIRMAN POWERS:** Thank you. The scope of work for this meeting
35 about this is basically a review, and there will be a formalized
36 presentation of it in September, presumably?

37
38 **MR. RINDONE:** A formalized presentation about this scope of
39 work?

40
41 **CHAIRMAN POWERS:** Yes. I mean, what it says here is -- What I
42 am asking is what do you want from the SSC? It says, however,
43 the SSC will still need to review the formalized terms of
44 reference at a later date.

45
46 **MR. RINDONE:** Right, and that's true for any scope of work, and
47 so the scope of work basically is the precursor to the terms of
48 reference, and we hash out our wish list in the scope of work

1 with the analytical body, and then that gets turned over to
2 SEDAR, who transforms it into terms of reference. Then the SSC
3 -- That's like the final thing that the SSC approves before the
4 assessment officially begins.

5
6 Again, in the case of what you guys are looking at, I have
7 structured the scope of work as terms of reference, to try to
8 make that whole process a little more seamless, so that what
9 you're seeing will be similar to what you have already approved,
10 and it should be very easy to identify any subsequent changes
11 between the scope of work and the terms of reference.

12
13 In this particular case, with hogfish, staff have already
14 discussed the content of this scope of work with the analytical
15 body, and everything that's been identified and changed has been
16 agreed to by the analytical body, and so, really, at this point,
17 it's if you guys have any other changes that you would like to
18 see made.

19
20 **CHAIRMAN POWERS:** Thank you. That clarifies it for me anyway.
21 Are there any other comments about this? Bob.

22
23 **MR. GILL:** Thank you, Mr. Chairman. I only have one question,
24 and the scope of work is the title of the document, but each of
25 the workshops are listed as terms of reference, and so my
26 thinking is what we really have here is a TOR for all three
27 workshops, and is that what a scope of work is? Why the
28 difference?

29
30 **MR. RINDONE:** I have listed them like that so that, when it
31 becomes terms of reference, if there is anything that changes
32 between its approval as a scope of work and its submission to
33 you guys for approval as the actual terms of reference, it will
34 be easy for you to identify, because this is the format that
35 we've been using for several years now, and everyone is familiar
36 with where certain things should appear, and I thought that it
37 would make it easier.

38
39 **MR. GILL:** Thank you.

40
41 **CHAIRMAN POWERS:** Thank you. Doug.

42
43 **MR. GREGORY:** Shouldn't we be at the point where these terms of
44 reference are simply a template and we ask the same thing for
45 every species, with the exception of some species-particular
46 items that crop up? I mean, it's like -- There shouldn't be
47 three pages of particular items for a single species.

1 **MR. RINDONE:** They largely are, but it's a recipe, and, like
2 Dave Chagaris had said, the data environment is constantly
3 evolving beneath our feet, and so we go ahead and we put
4 everything on there, because it's just electrons, and it's not
5 killing anything, and it provides a thorough template for the
6 analytical body to move through to make sure that all the I's
7 are dotted and the T's are crossed, and, if there's anything
8 that comes up, we've been meticulous about our planning, and
9 hopefully nothing falls through the cracks.

10
11 **CHAIRMAN POWERS:** Thank you. Are there any other comments on
12 this? If not, moving on then to the schedule.

13
14 **DISCUSSION OF THE GULF SEDAR ASSESSMENT SCHEDULE**

15
16 **MR. RINDONE:** All right. Thank you, sir. This is our SEDAR
17 schedule that you guys have in front of you. Obviously, we're
18 in 2019, and so there are no projected changes possible there.
19 The king mackerel update assessment is -- Well, I will start
20 from the top.

21
22 Triggerfish is underway, and you got an update about that a
23 little bit earlier, and red grouper is finished, and you guys
24 will review that at your next meeting in September. The scamp
25 research track is underway, and it's in the stock identification
26 process right now, and we haven't begun vermilion snapper just
27 yet or cobia, and the FWC is working hard on yellowtail, and the
28 HMS branch of NMFS is working hard on king mackerel, and we've
29 had a couple of data calls about king mackerel so far. Any
30 questions on 2019?

31
32 **MR. GREGORY:** So we can expect to see king mackerel at our
33 January meeting?

34
35 **MR. RINDONE:** No. It's probably going to be your March or
36 subsequent meeting, and I've been trying to get all the data
37 together, and it has pushed it back a couple of months, and so,
38 originally, it was projected to be delivered at the end of
39 December of 2019, but they have had to since revise that back a
40 little bit. Any other questions on 2019?

41
42 2020, which, again, is fixed, and vermilion snapper will finish
43 up, and cobia will be completed, and we will begin our
44 operational assessments for greater amberjack and gag, both of
45 which have approved scopes of work, and the research track for
46 scamp trudges along, and we have a benchmark assessment for
47 mutton snapper scheduled with FWC to begin at the end of 2020.

1 **MS. NEER:** Ryan, I was just going to say that mutton is probably
2 not actually going to begin until early 2021, given the other
3 data requirements and my discussions with them during
4 yellowtail, and I forgot to update you on that, and so mutton
5 won't start until 2021.

6
7 **MR. RINDONE:** All right. Thank you, Julie. Any other questions
8 about 2020? Seeing none, 2021. We will finish up our
9 operational assessments for greater amberjack and gag, and just
10 a side note about those is we have requested an in-person
11 workshop as a component of the gag operational assessment, but
12 not the greater amberjack one, and that's just because of the
13 difference in data available for those two species, and there's
14 a lot more that becomes available and a lot more analyses into
15 things like red tide, et cetera, for gag, and the data for
16 greater amberjack are -- It's really going to follow more of an
17 update template than anything else.

18
19 2021, scamp trudges along and finishes up its research track
20 component, and we are looking to begin a red snapper research
21 track in 2021, and we have our operational assessment for scamp,
22 which is where we got our management advice, and so the -- You
23 will notice that, for the research tracks, we don't have a
24 terminal year listed, and that's because the terminal year is
25 not as critical for the research track, and it's more to try and
26 build the car and not decide necessarily how far you're going to
27 drive it, and so the latter is determined with the operational
28 assessment, and then we have our gray snapper operational
29 assessment that we've requested for 2021 also, but we don't have
30 a defined or a theoretical even start date for that one yet.

31
32 Then, as Julie mentioned, mutton snapper looks like it will
33 begin in Q1 of 2021, or somewhere thereabouts, and conclude
34 later. Any questions on 2021?

35
36 2022, we will finish up our operational assessment for scamp,
37 and we will get our management advice from that. We will trudge
38 along with our red snapper research track, and we will finish up
39 gray snapper, and we've listed on here red grouper and red drum
40 research tracks for 2022, and, obviously, having three research
41 tracks going on at the same time is probably the heaviest of
42 heavy lifts, but this is deeper into the proposed part of the
43 schedule, and, as we stated yesterday, or somebody had asked and
44 I clarified, for this assessment to have any chance, it depends
45 very much so on the completion of the studies in the eastern and
46 northern Gulf of Mexico with respect to the offshore spawning
47 populations and sampling those to be able to develop age and
48 length composition data for those portions of the population.

1
2 We can think of the red drum one as being surrounded by a circle
3 of question-marks right now, but, red grouper, given what we've
4 dealt with with red grouper in recent history, without you guys
5 having seen the latest and greatest stock assessment, we have
6 that one on there, in case there is some frame-off restoration
7 needed for that one, and then we have the aforementioned
8 benchmark assessment for west Florida hogfish starting the
9 beginning of 2022 and ending later that year.

10
11 Then, if we move into 2023, you see the cleanup effort for
12 everything else that's listed previously. The important things
13 to remember is that 2019 and 2020 are going to happen, and those
14 are happening. Those are scheduled, with the caveat about
15 mutton, and 2021 should, for the most part, be looked at as
16 those things are also happening at this point, because we're
17 well into 2019, obviously, and, in 2022 and beyond, there is
18 definitely some flexibility in scheduling, and so, if there are
19 things that you guys would like to recommend to the council, as
20 far as modifications, those are really the areas to do it. Any
21 thoughts? Just tell Carrie she's doing a great job negotiating
22 with the Steering Committee?

23
24 **CHAIRMAN POWERS:** Carrie, are you raising your hand?

25
26 **EXECUTIVE DIRECTOR SIMMONS:** Based on what happened earlier, or
27 yesterday, and it's blending together, for black grouper,
28 yellowedge grouper, and tilefish, and I think we have talked
29 about this at various times over the last couple of years, and I
30 think we want to see them move forward, but we're just not
31 really sure where they belong and what we need to do to make
32 them successful, and so we'll continue to have some
33 conversations with the Science Center and FWC about that, but
34 that's definitely on our radar.

35
36 **CHAIRMAN POWERS:** Thank you. Okay. You're basically noting
37 that?

38
39 **MR. RINDONE:** Yes. Noted.

40
41 **CHAIRMAN POWERS:** All right. Are there other discussions about
42 this? Thank you, Ryan. That will move us on to explosive
43 removals. What we have here is a presentation by Dr. Gallaway
44 about the process of removal of structures and some interesting
45 aspects of that, including how many of them actually occur, and
46 so, with that, I will give the floor to Benny, and we'll go from
47 there.

1 **EXPLOSIVE REMOVAL OF STRUCTURES: FISHERIES IMPACT ASSESSMENT**

2
3 **DR. GALLAWAY:** Thank you, Mr. Chairman. I am listed as the
4 presenter of this study, and I will be presenting it, but I also
5 have, in support of this presentation, Dr. Scott Raborn, who is
6 sitting in the back, and he will be available to answer any
7 questions you might have on the detailed modeling efforts that
8 went into the study.

9
10 I would like to start with the cover page, and I won't digress
11 too much, because it's a pretty long presentation anyway, but
12 the first offshore oil and gas platform in the Gulf of Mexico
13 occurred off of Louisiana in about 1947, and, since that time,
14 there was explosion in installations, moving further and further
15 out into the Gulf, as more and more oil was discovered.

16
17 That, as you might imagine, caused a great deal of consternation
18 with the fisheries, who were concerned about their operations
19 being impacted by the presence of these structures, and so, very
20 early on, it was negotiated that, without equivocation, at the
21 end of the useful life of one of these platforms, they would be
22 removed, no questions asked. That regulation holds until today,
23 with one caveat that, if it's accepted as a donation for a state
24 artificial reef program, it can be reefed in a designated
25 artificial reef site.

26
27 Most of these platforms are removed using explosives, and, as
28 you see, the left-hand panel on the cover, that's a stream of
29 fish wafting away from a platform following these explosions.
30 They put explosions on the legs of the pipes, fifteen feet below
31 the mud line, and sever the pipes, and then they remove the top,
32 and, as you can see in the right-hand panel, they use barges to
33 transport the structures back to town.

34
35 The study that we conducted was funded by the U.S. Department of
36 Interior, Bureau of Ocean Energy Management, or BOEM, as well as
37 their sister organization, the Bureau of Safety and
38 Environmental Enforcement, BSEE. Most of us know those as what
39 used to be MMS, and so this is the new version of MMS, and it
40 was an environmental studies program.

41
42 In early 2016, BOEM perceived a need that they needed to do an
43 updated estimate of the potential impacts of Gulf of Mexico
44 fisheries due to the explosive decommissioning of these
45 platforms. They were coming out at a very rapid rate.
46 Incidentally, they got up to about 4,000 of these structures in
47 the Gulf of Mexico by the mid-1990s, is what the magnitude was.

1 By June, they awarded a contract, and we were the lucky, or
2 unlucky, beneficiary of that contract to do the study, and the
3 study's focus was defined for us, and it was the federal waters
4 in the Gulf of Mexico and what they call their western and
5 central planning areas, essentially from the limit of state
6 waters out to a depth of 300 meters, and so that extends from
7 basically Alabama to Texas, is their central planning area.

8
9 This is just to give you what it looks like now, and the number
10 of structures is down to about 1,200, and you can see a table on
11 the right, and that gives you the number of standing platforms
12 that are still out there by state, and, as you can see in 2017,
13 there was 1,216, of which 75 percent were in Louisiana. If you
14 look at the map, most of these platforms are located in offshore
15 Louisiana.

16
17 The lines that you see there, I have tried to put it in
18 something that might be more meaningful to this group, and those
19 are the red snapper state management area boundaries that have
20 been -- I hope that I have got them reproduced. The color depth
21 assemblages are classifications of the bottom depth by
22 assemblage structure associated with these platforms, based on
23 the literature and historical study.

24
25 To give you some idea how they are coming out, this shows the
26 number of platforms each year, beginning in 2000 and extending
27 to 2018, and it's color coded to show the number of platforms
28 that were present in each of the depth zones that I have
29 described, and it's ten to seventeen meters, eighteen thirty,
30 thirty-one to ninety, and ninety-one to 300, is how the depth
31 zones fell off, based on biological assemblages associated with
32 these platforms.

33
34 The number at the top of the bar represents the number of
35 platforms that were removed each year, and various numbers of
36 those were moved using explosives. There are several techniques
37 that are now in play for removing them, but roughly 40 to 50
38 percent are still being removed using explosives.

39
40 The study objectives that we had was to characterize the
41 relative abundance and distribution of commercially and/or
42 recreationally-valuable federally-managed species within the
43 lethal blast radius of explosive severance charges used during
44 the decommissioning process, and we were to develop a technique
45 to estimate or model species-specific mortality of managed fish
46 species due to these explosive severance activities,
47 incorporating factors such as severance methods and
48 environmental variables.

1
2 We were to compare our study results with mortality estimates
3 currently used in fisheries management plans or recent stock
4 assessments, and the goal is to take these numbers and
5 ultimately enter them into the stock assessment and see if it
6 makes a difference in the population. Then BOEM wanted us to
7 recommend to them how they could minimize their impact to the
8 fisheries, should they occur.

9
10 Our team was a pretty diverse team, and I was fortunate enough
11 to get to serve as the program manager, and Brad Erisman was our
12 hydroacoustics principal investigator from the University of
13 Texas, and his primary assistant was Jack Egerton, Dr. Jack
14 Egerton, who was doing a post-doc for the hydroacoustics.

15
16 Stephen Szedlymayer was our acoustic tagging and telemetry PI,
17 and Katherine Kim is our shockwave propagation and mortality PI,
18 and Scott Raborn was our project biostatistician. We have Bill
19 Gazey, who many of you know, who will help us running the stock
20 assessment, and then one of the things that we did in this
21 project that was different from most projects is we worked
22 closely with the charter/for-hire industry in providing all of
23 our logistics.

24
25 What we found was they were nimble, and they were big enough and
26 capable enough that they could catch fish, which many scientists
27 seem to have a hard time doing, but so we contracted the charter
28 industry as citizen scientists to provide the logistic support.

29
30 We also spent a lot of time in planning, and we met with Chris
31 Taylor and his lab for hydroacoustic advice and trying to
32 incorporate the most recent methods and methods that would be
33 consistent with other kinds of programs that were going on in
34 the Gulf of Mexico.

35
36 We had another aspect to our study that is perhaps not common,
37 and we had a formal peer review group, and the peer review group
38 consisted of Gregg Gitschlag, who is with the NMFS Laboratory in
39 Galveston, and Gregg has personally attended every explosive
40 removal of platforms in the Gulf of Mexico, Gregg or his staff,
41 and I think he personally has.

42
43 **DR. NANCE:** No.

44
45 **DR. GALLAWAY:** Did he miss one?

46
47 **DR. NANCE:** Well, his staff for sure, but Gregg has overseen the
48 platform program in Galveston since its inception in the 1980s,

1 and he has been on or overseen platform that has been removed
2 with observers.

3
4 **DR. GALLAWAY:** So he has overseen our work in that area. For
5 stock assessment advice, we're using Dr. John Walter, who I'm
6 sure most of you know, and then, since most of these were in
7 Louisiana, for our platform ecology, we used Dr. Ed Chesney with
8 LUMCON, who is well known for doing platform studies, and those
9 were our peer review group. Every major document that we
10 produced went through them for advice and review.

11
12 The first task that we did was do a comprehensive literature
13 synthesis, and this is the current literature describing
14 everything we could find about the federally-managed species and
15 their biology and their distribution, et cetera, everything that
16 we could find out about petroleum platform ecology, what the
17 assemblages were, the updates on the assemblages, where we had a
18 good working background, and that literature synthesis ended up
19 in a big database, which will be available at the end of the
20 study, should you want to have access to it.

21
22 That distribution, or that set of information, enabled us to do
23 a stratified random sampling program, where we could pick out
24 platforms relative to pertinent strata that had some meaning,
25 and that helped us establish our primary field design, and the
26 field studies were restricted to May through October period of
27 2017 and 2018, and we were restricted to a total of thirty
28 platforms each year.

29
30 Our literature synthesis list, we can up with thirty-nine
31 managed species that you see listed in this table, and you don't
32 have to read them all. Of those, the literature documented at
33 least twenty-five of those species occurred on platforms, and we
34 reviewed those twenty-five for ones that had a detailed
35 comprehensive stock assessment, and there was nine of them, and
36 we selected five to be our study species focus, and they were
37 cobia, gray triggerfish, greater amberjack, red snapper, and
38 vermilion snapper, and those aren't necessarily in the order of
39 abundance.

40
41 Thirty platforms are shown in this slide, and, like I said, they
42 were randomly selected based on the distribution of platforms
43 and assemblages, et cetera, and so we feel like we have a
44 randomly selected sample that we can use to extrapolate the
45 totals from platforms within that depth zone with a minimum of
46 bias, or at least that's our hope.

47
48 The primary workhorse of the project, our primary way of

1 counting fish, was hydroacoustic surveys complemented with
2 submersible rotating video cameras, and that was used to
3 estimate the total number of fish present and the species
4 composition of fish at all sixty sites.

5
6 In addition to hydroacoustic surveys, as synoptically as
7 possible within a few days, we also conducted hook-and-line
8 sampling at all of the sites, and fish were -- We took
9 independent SRV surveys and water quality profiles, and so we
10 had multiple SRV luring at a site, along with multiple
11 observations of water quality.

12
13 Fish that were collected were identified to species and sex and
14 weighed and measured, and the otoliths were extracted. We felt
15 it was important, and we did the dockside processing on the same
16 day that the samples were collected, which, at a subset of ten
17 of the thirty platforms per year, we did experimental mark-
18 recapture studies to obtain independent population estimates.

19
20 You always have a real question of are you allocating the
21 species properly, are you counting them right, and are you
22 allocating them to species properly, and so that allowed us to
23 use the mark-recapture studies to go with this, at for red
24 snapper, and see what we came up with.

25
26 In addition to mark-recapture studies, we conducted acoustic
27 telemetry studies at a subset of thirty of these platforms, and
28 it's a big question of do these red snapper, which was our focal
29 species, do they hang around platforms, do they come and go, do
30 they stay there forever, et cetera, and so we set out an array
31 of receivers and acoustically-tagged fish, so we can track
32 individual fish over time, and, like I said, it was a subset of
33 seven sites. Again, every time we took a collection, we took a
34 vertical profile of the water quality conditions at that site.

35
36 Our analytical methods, if you looked at the presentation, you
37 know that it's about twenty pages of material, supplemental
38 material, at the back that cover -- The modeling gets pretty
39 complex, and I wanted to just give a brief overview of our
40 analytical approach here. If we want to go into questions about
41 it, we can do that at the end of the presentation.

42
43 We have just finished our assemblage characterization report,
44 which describes the hydroacoustic and SRV surveys, what's
45 present and where are they located around platforms and how long
46 do they stay there, and that program has been published, and I
47 have shared that, with the permission of the sponsor, with Dr.
48 Stunz, so that we can start, as much as possible, integrating

1 the results from the, quote, unquote, Great Red Snapper Count
2 Study with this one.

3
4 We modeled assemblage structure and total fish abundance
5 separately using the SRV and hydroacoustic data for each bottom
6 depth zone that you saw earlier, those colored bands, and
7 vertical layer within that vertical band. For those
8 combinations, we made predictions from both models and then
9 combined those to provide species abundance levels, complete
10 with confidence intervals.

11
12 We also give species abundance levels for what we predicted an
13 average platform within each of those depth zones, and that may
14 raise some question of, given all the variabilities that can
15 occur, does an average platform really exist, rather than the
16 average of specific sites?

17
18 Our estimates may not apply specifically to any single platform
19 that we looked at within a depth realm, but we argue that, all
20 things considered, given the random sampling, et cetera, that we
21 have an unbiased basis for projecting our abundance estimates to
22 the total set of platforms within that area. Like I said, the
23 detailed methods are in the report, which will soon be
24 available, and I have provided detail in the supplemental
25 materials, and Scott is here to answer questions that you might
26 have.

27
28 The findings of the program is in a complex table that I don't
29 expect you to read every line, but this is for your information
30 later, and the yellow highlighted -- I don't know what color
31 that is, but mine is yellow, but the highlighted species are the
32 five focal species, and, if you look, we documented thirty-six
33 total species in our study, and keep in mind that we're not
34 swimming among the platforms, and we're not counting gobies and
35 this sort of thing, but we're just doing the big fish with SRV
36 counts.

37
38 We documented thirty-six species in total at the site, and then
39 the columns there represent the four depth zones, the ten to
40 seventeen, eighteen to thirty, et cetera, and the highlights are
41 the highlighted species, the focal species, and then, down at
42 the bottom, you see the total numbers at each platform.

43
44 The shallow platforms, the ten to seventeen, we have like 8,000.
45 When you move out deeper, you get 15,000, 15,000 or 16,000, out
46 to about a hundred meters, and then you get another jump in
47 abundance, which we are all of a sudden starting to be unable to
48 identify a lot of them, because they are large schools of

1 baitfish moving around the platform that aren't really easy to
2 identify.

3
4 At each site, we got something like nearshore was seven species,
5 twenty-six species, thirty-two, and thirteen on the deepest.
6 The model, it models abundance at a platform, and it thinks that
7 everything can occur at the platform, and, sure, you would
8 expect that, if you go to a platform on any given day, there
9 might be a species that you didn't see on that day that would be
10 expected to occur there, and so the model predicts those, and it
11 also predicts everything else that might occur there, a lot of
12 them that you wouldn't expect to be there, but, if you look at
13 those, we were very pleased with how this came out, because
14 those are very small numbers, or trace numbers, just like you
15 would expect, and, if you looked at the ones that actually
16 occurred, they accounted for usually 98 percent of the biomass,
17 and so we were very happy with our model results.

18
19 On the distributions around the platforms, we found a close
20 association from the hydroacoustic data, and abundance decayed
21 with distance from the platform, as you see represented in this
22 graphic, and the platforms harbored significant reef resources,
23 including particularly red snapper, vermilion snapper, greater
24 amberjack, cobia, and a lot of other species that you see in the
25 pictures, and that's our minimum size gray triggerfish in that
26 right-hand panel there, and I forget how much it is, but it's a
27 big one, and it's about 500 millimeters, I think.

28
29 In this presentation, I am going to specifically run over red
30 snapper and greater amberjack. In the supplemental materials, I
31 have the data for the other species that we focused on. For red
32 snapper, this is just some action shots. If you look at our
33 population estimates for depth zones using hydroacoustics and
34 compare those to the individual population estimates, if you
35 look at that center depth zone of eighteen to thirty, where most
36 of our population estimates -- Our population estimates, a
37 median value across all the estimates, was like 1,166 red
38 snapper present at an average platform within that range.

39
40 If you look at the average, the actual average, based on the
41 population estimates, we got 1,015, and so we missed it by 150
42 fish or so, which we were quite happy with that graphic, and
43 that is -- We like it.

44
45 The population method, we followed a Bayesian approach that was
46 patterned after Gazey and Staley published in *Ecology* in 1986.
47 Using this approach, you set feasible population bounds, and it
48 can't be less than the number you tagged, and it can't be over

1 ten million. You can put bounds on it, and then, given your
2 mark-recapture data, from having that, you can calculate an
3 exact probability for each population size within that bound.

4
5 Not only do you get a confidence interval, but you get a
6 probability distribution for each interval, and that method
7 doesn't seem to have caught on a lot in the peer-reviewed
8 literature, but is an *Ecology* publication, and it's a good
9 method.

10
11 Here on the left, you see that we got good returns on our
12 marking, and you can see like a population with a small size,
13 very tight confidence intervals, and even on a large population
14 size it's fairly reasonable, and so we're comfortable with that.

15
16 We tagged seventy-one red snapper with acoustic tags and
17 released at three sites, one over in Alabama and two offshore
18 Louisiana, and those were all in the eighteen to thirty-meter
19 depth zone. Like I said, there was an array, and we had an
20 acoustic transmitting tags, and we had receivers all around the
21 platform, such that we could monitor the distribution of
22 individual fish.

23
24 After tagging, and we're catching these fish and fighting them,
25 and they're exhausted, and we anesthetized them, and we
26 internally implant the transmitter, and then we put an anchor
27 tag, and so it's pretty tough on the fish, and so we gave them
28 six days for a recovery period, which that's based on Dr.
29 Szedlmayer's trial and error, and he feels that's adequate, and
30 so, after six days, we start tracking them.

31
32 You get a graph that looks something like this, and the black
33 bars represent the activity and presence of the fish at that
34 particular site, and, when you're able to look at it where you
35 can see it, you will see that the individual fish number is
36 listed on the left, and you see what happened to that fish
37 during the course of the study.

38
39 A total of eleven of the fifty-nine fish that survived marking
40 permanently immigrated following residency of a site, up to
41 thirty-three to over a year at the site. For some reason, they
42 left during that period and didn't come back.

43
44 We had twenty-four fish, and you see some gaps, a lot of little
45 gaps and then big wide gaps in the distributions, and twenty-
46 four fish exhibiting homing behavior, leaving and returning to
47 the sites following absences of three to 184 days, and so they
48 do move, and some -- One, the very bottom one at the bottom of

1 the graph, which was a very large fish, was marked in the early
2 spring of 2017, and this record goes through the spring of 2018,
3 and that fish is still there, and that's at a site in nearshore
4 Alabama, and you can see high-rise condominiums off in the
5 distance, and it's heavily fished, and no one has caught that
6 fish, or landed that fish, again, and so he's still there, and,
7 if you don't think that Steve doesn't give me a hard time about
8 my premise that, when fish get older, that they leave the
9 protection -- They're not dependent on reefs and they go, and
10 here's one on the beach that stayed at a platform for three
11 years, and I will never live it down.

12
13 The fish that were tagged typically remained in close proximity
14 to the platform, and the mean distance was like twenty-eight
15 meters, and we had something like 879,000 good location records.
16 About 10 percent of these fish, at any given time, were under
17 the platforms, and 84 percent were within 95 meters of the
18 platform, and six were more than 95 meters, and so, again, that
19 backed up our hydroacoustic surveys that there is close
20 proximity.

21
22 This gives you a little bit of distribution, and it's the same
23 data plotted in a slightly different way. The frequency of
24 fish, you can see the big spikes on the bottom, and that's that
25 the fish were right around the platform, and the circles of dots
26 here are individual fish, their home ranges around the platform,
27 and they stay -- When they're at the platforms, they stay at the
28 platforms, and we do have them on video feeding on Atlantic
29 bumper and things like that, and so there is some trophic
30 interactions, although that was not a goal of our study.

31
32 Using this approach, there is a known fate model in the MARK
33 Program, and I don't know if you all are familiar with that, but
34 it's a program for dealing with these kinds of data, and that
35 was developed at Colorado State University by White, and you can
36 use that data, or that model, to estimate fishing mortality,
37 natural mortality, and total mortality.

38
39 Then these shallow platforms, I think something jumped out at
40 us, because that's F equals 0.86, and so these shallow platforms
41 are heavily fished, and the natural mortality rate was estimated
42 to be right in line, I think, with the stock assessment
43 estimate, and I think that's close, and, of course, total
44 mortality was high, because of fishing mortality.

45
46 If we look now at the total abundance of red snapper on
47 platforms in 2017, this shows abundance by depth zone by state,
48 and the orange bars is the State of Louisiana, and the depth

1 zones are ten to seventeen and so forth, and I hope you can see
2 those, and, if you look there, in Louisiana, there is about a
3 million red snapper on platforms within the thirty-one to ninety
4 depth zone.

5
6 In 2018, platforms had been removed, and so those numbers are
7 dropping by the specified amount. In 2017, the biomass of those
8 million or so red snapper on the Louisiana program was like six-
9 million pounds on platforms alone in the Louisiana management
10 area, and that's where a lot of the fish in the recreational
11 sector are harvested, and they can find those.

12
13 Here, I have done red snapper total abundance on platforms Gulf-
14 wide, and, again, you see that there's a high skew, or the data
15 suggests high abundance in the thirty-one to ninety depth range,
16 and you see, in 2017 and 2018, the declines in the confidence
17 intervals, and, on the biomass, which is the lower panel, in
18 2017, I thought that was interesting, because the biomass on
19 Gulf platforms in 2018 was 9.12 million pounds, and that number
20 should ring a bell for many of you.

21
22 That was the total TAC for red snapper for many, many, many
23 years, and so that's a lot of red snapper on Louisiana
24 platforms, but we also used the most recent stock assessment for
25 the basis for comparing for each species, and so, really,
26 proportionally, that's not a lot of the red snapper stock on
27 platforms in general. The left panel is about 4.9 percent of
28 the stock, of the red snapper stock, occurred on platforms, and,
29 since most of them are in Louisiana, I felt that it was
30 important that it was about 3.7 percent of the total red snapper
31 occurs on platforms in Louisiana.

32
33 As an aside, our peer reviewer, Dr. Chesney, has studied
34 extensively shallow-water platforms, and, if you blow these
35 pictures up, when you get a chance, you will see that those
36 nearshore shallow platforms are just swarming with age-zero and
37 age-one red snapper.

38
39 Now I will move to amberjack, and the thing that impressed us
40 was in the western Gulf of Mexico, and the amberjack on offshore
41 petroleum platforms are large. We did not see many small
42 amberjacks at all, and this is not an atypical photograph. If
43 you catch an amberjack out there, it's going to be a large
44 amberjack.

45
46 Here is the same distribution again, showing amberjack by state
47 and depth zone for 2017 in the top panel and 2018 in the bottom
48 panel. Again, you are looking at on the order of 200,000

1 amberjack, and that doesn't sound like many compared to red
2 snapper, but we'll get a context for that in a few minutes.

3
4 If we look at total amberjack on platforms, you get numbers kind
5 of like this. You get up around 250,000 amberjack on platforms,
6 most of which are off of Louisiana and west of the mouth of the
7 river for the most part, and, not surprisingly, but an
8 observation is you look at that, what proportion of the total
9 numbers in the stock assessment do they represent, and it's like
10 45 percent of the total amberjack population appear to be -- If
11 both sets of numbers are correct, that would be the proportions,
12 and I urge you that I suspect that you might want to re-examine
13 your amberjack stock assessment for total numbers. I suspect
14 it's a bit low, and I have some reasons for why that might
15 occur, but it's pure speculation, and so I won't present it to
16 the SSC. I will present it to my political friends.

17
18 What came across to me, and this is where I'm going to get in
19 trouble, but I'm going to feel very strongly about it. You saw
20 that most of the platforms are in western Louisiana, and are the
21 federally-managed fish resources of western Louisiana at risk,
22 due to taking out these platforms?

23
24 Well, we'll go into that in a minute, but, before I say anything
25 else, because I know our other team, Mark Belter, who works for
26 BOEM and is my client, is probably listening, and so I want to
27 make sure that I give you these caveats. What I'm about to say
28 is I'm going to give you some of my preliminary thoughts, and
29 it's mine and my company's alone. BOEM's official position is
30 it remains in line with the Offshore Lands Act and assumes that
31 all OCS facilities are temporary and must be removed at the end
32 of life, unless a waiver is granted.

33
34 Therefore, and this was interesting to me, platforms, pipelines,
35 et cetera, are really not considered habitat in the same sense
36 as live bottom and are managed differently. They are
37 artificial. However, BOEM funding this study, I think, does
38 highlight the agency's recognition of the presence and
39 importance of the fish resources around these facilities, and
40 this study is intended to help BOEM and BSEE evaluate potential
41 impacts of decommissioning activities and come up with better
42 management decisions. At this time though, BOEM has not
43 indicated a change in direction or recommendation, and, since
44 the study is not complete, I am not going to go into a lot of
45 detail on what I think. I'm going to give you some rationale.

46
47 First of all, I would like to review where the platforms are,
48 and you can see there that 75 percent are off of western

1 Louisiana. The importance of those habitats depends on what
2 other reef fish habitat is there and what other aggregation
3 points are there.

4
5 If you look at the natural bottoms, and this is the U.S. Seabed
6 Database, which has been used in several assessments, and the
7 bottoms are mostly mud or sand bottoms, with a few natural banks
8 and some shelf-edge banks and really not much else, in the way
9 of artificial reefs.

10
11 Louisiana has been proactive, and they have reefed some 368 of
12 these platforms, and so there are those platforms, and I may
13 point out to you also that there are hundreds, thousands, of
14 kilometers of pipeline corridors and pipeline crossings, which
15 may also contribute habitat, but, again, those are artificial
16 habitats.

17
18 If you remove all the artificial habitats, and, before I show
19 the next slide, I didn't get to revise some wording, and I used
20 some words that I wished I hadn't, because they are hot-button
21 words, and I apologize for it, and so ignore the second bullet
22 until I get to it.

23
24 There is a platform being reefed, and I think oil and gas
25 platforms in western Louisiana is a significant proportion of
26 the habitat in their red snapper management area, and their
27 local removal will remove that habitat, and the bottom -- What I
28 wish I had said is, without extensive reefing of the platforms,
29 there is going to be large localized reductions in access to red
30 snapper, and the fishermen won't be able to find the fish.
31 There is going to be a big impact, in my opinion, on the
32 localized fishery of western Louisiana. On the stock as a
33 whole, no. I did it in less than thirty minutes, didn't I,
34 Ryan?

35
36 **MR. RINDONE:** I'm proud of you.

37
38 **CHAIRMAN POWERS:** Thank you.

39
40 **DR. GALLAWAY:** I told you I would.

41
42 **CHAIRMAN POWERS:** That's interesting. One of the things, and
43 you probably alluded to it, but, for the case of red snapper,
44 the size distributions, have you got information about the size
45 or age distribution?

46
47 **DR. GALLAWAY:** We have size and age distributions and length-
48 weight, and we did condition analyses and all of these things,

1 but, yes, we have size frequency and age frequency information.

2
3 **CHAIRMAN POWERS:** Were they mostly small or mostly big, or was
4 there a wide range?

5
6 **DR. GALLAWAY:** They were mostly three to six. I will get a
7 graphic here, and I have the report. Incidentally, BOEM is
8 willing to make the report available for use. You can't publish
9 it, and the data are not final, and it's not approved, but, for
10 information purposes, it's available. For example, I have the
11 age distribution, and it's basically from three to five, and you
12 can see the progression going three, four, and five, and it
13 changes by distance offshore. The younger, smaller fish are --
14 We have all that in the report.

15
16 **CHAIRMAN POWERS:** Yes, and I was just thinking of just sort of a
17 broad-based interpretation of what 4 percent was.

18
19 **DR. GALLAWAY:** They are mainly, like I said, three, four, and
20 five.

21
22 **CHAIRMAN POWERS:** All right. Bob.

23
24 **MR. GILL:** Thank you, Mr. Chairman. Thank you, Benny. That
25 was very interesting, and, of course, this subject has been
26 bouncing around for years, and so it's even more interesting to
27 see what you've done thus far, and so refresh my memory on the
28 timing. Your study is going to complete when, and what is the
29 anticipated time of BOEM's reaction to the study?

30
31 **DR. GALLAWAY:** Our field studies were completed in 2018, and we
32 had two years of field studies, and we've completed our
33 characterization report, which is the one of these are the fish
34 that live there and how many and how big, and that's all
35 completed.

36
37 That information has now -- We have taken all the engineering
38 drawings and all that and have provided it to the guys that are
39 going to blow them up in the model, and we've got this many fish
40 around them, and kill them all, and then we'll get John Walter
41 to plug that into the stock assessment and see the impact.

42
43 The explosive effects should be completed sometime early this
44 fall, and I am pushing to have the project completed by the end
45 of the year. I expect that's optimistic, and we have another
46 year on our contract, but I want to get it done, and so I'm
47 hoping that we'll be done by the end of the year.

1 **MR. GILL:** When you expect a BOEM response if you meet that, a
2 year later?

3
4 **DR. GALLAWAY:** No, BOEM will -- I don't know what you mean by
5 BOEM response, but they will approve it at the time, and we'll
6 submit it, and they will review it and either approve or reject
7 it, and I expect they will approve it.

8
9 Incidentally, I have got to brag on my staff. BOEM ranks
10 contractors every year, and they have a series of contractors,
11 and it goes from this is terrible to excellent, are the
12 rankings, and, the first year, all of our rankings were very
13 good to excellent. This past year, we've gotten all excellent
14 rankings for every category, and so I expect that they will
15 approve this posthaste and it will be available for use by the
16 council, or whoever needs it.

17
18 Like I said, we are attempting -- I am interacting with Greg,
19 and we hope to get these studies integrated with the other study
20 that's ongoing, and there may be a third study initiating this
21 next year, and so there may be more information about red
22 snapper than you ever wanted to know within two years.

23
24 **CHAIRMAN POWERS:** Thank you. I have another question that sort
25 of relates to the right-hand picture. Pretty much everything
26 that's there gets killed when you do the explosion?

27
28 **DR. GALLAWAY:** It depends on how close, and these explosions are
29 fifteen feet below the mud line, and so you've got a layer of
30 mud, and that enters the water, but, usually -- The preliminary
31 assessment of the modelers is they just shake their heads and
32 say this is probably going to get most of them that are there,
33 but what we see -- I think that picture, or the one on my
34 questions slide, that is the second day.

35
36 A lot of times, they don't completely sever with the first round
37 of explosions, and they have to come back the next day or the
38 next day and do some more explosions, and so the fish that
39 weren't in the lethal blast radius, plus all the predators that
40 are chowing down on the fish on the bottom, get zapped the
41 second or third day.

42
43 **CHAIRMAN POWERS:** Did somebody have a -- Luiz.

44
45 **DR. BARBIERI:** Thank you, Mr. Chairman. Benny, again, great
46 presentation, and that was very informative. I was just
47 wondering, looking at your estimates of red snapper there and
48 how they compare proportionally in the Gulf, the total abundance

1 of the population in the Gulf in that area, in those structures,
2 and if you looked, and I was trying to look quickly here at that
3 paper that Mandy Karnauskas and colleagues published a few years
4 back that was looking at the distribution on natural habitats
5 and artificial structures in the northern Gulf of Mexico. Their
6 results basically report that less than 14 percent of red
7 snapper abundance could be attributed to those artificial
8 habitats.

9
10 **DR. GALLAWAY:** The oil platforms are, yes, and our results are
11 consistent with that, and, as you know, I had previously, and I
12 think it was back in the 1980s or 1990s, published a paper where
13 I thought the proportion of age-tuos might be considerably
14 higher, and I no longer believe that, and the reason for that is
15 the stock assessment, the mortality rates that we were using
16 back then, had indicated that the population size in those days
17 was much larger than what it actually was, based on our new
18 information, and so I was right, but for the wrong reasons, or
19 something like that. It was true then, but it turned out to be
20 based on a false premise as the number of total fish, but that's
21 about right, I think, somewhere in that range.

22
23 **CHAIRMAN POWERS:** Jim.

24
25 **DR. NANCE:** Thanks, Benny. Gregg did a very similar study, back
26 in the 1990s, I think, and there were not as many platforms, and
27 does your numbers compare with what Gregg got?

28
29 **DR. GALLAWAY:** My numbers compare with what Gregg got in the
30 area that he studied. He was mainly a shallow-water -- If you
31 look at that table and look at the number of red snapper, there
32 are like up to 1,000 say, but, if you get out in that thirty-one
33 to ninety, you're talking about 3,000 fish per platform, 3,000
34 big fish, compared to a bunch of small ones.

35
36 **DR. MICKLE:** Benny, I enjoyed the presentation, and my first
37 question is, is this intended -- Although it's not finished yet,
38 is there an intent for bringing this to the council as an
39 update, such as you've brought here, or are you going to wait
40 until the end? I mean, I don't even know whose call it is, but
41 I'm assuming that it might be in the SSC summary when it's
42 brought up next month, a brief excerpt, but I can see at least
43 two states, most likely three, that would be very interested in
44 this.

45
46 **DR. GALLAWAY:** In answer to that question, originally, the
47 people who really wanted me to present this was our charter boat
48 colleagues, and they wanted me to present it to the council, and

1 I said that it's not done that way, and you go to the SSC, and
2 then you guys determine if the council -- If the SSC has
3 reviewed it and you want a presentation at the council, that's -
4 - I guess that's your call, but I have to start at the -- I
5 don't have to, but I want to start at the SSC level.

6
7 **DR. MICKLE:** Thank you. My last question is I guess directed to
8 NMFS. When the right whale went to listing, did that change
9 anything involving the explosion methods being used, because
10 there are, obviously, alternative methods for removing these
11 structures, and has the new listing of the right whale or any
12 other -- Obviously turtles has changed some permitting processes
13 at NOAA, but there is no status change with the different
14 species of turtles, but, with increased listing of certain
15 things like that, does that impact -- I don't know if this
16 question is directed to you, Benny.

17
18 **DR. GALLAWAY:** I will defer that to Jim.

19
20 **DR. MICKLE:** I see Roy walking a little closer to a microphone.

21
22 **DR. CRABTREE:** Well, the whale that was recently listed in the
23 Gulf was the Bryde's whale, and right whales are rare, and most
24 of the Bryde's whale habitat is in Desoto Canyon and south of
25 that, and so it's really almost all to the east of where the
26 rigs are, and so I don't think there would be an impact.

27
28 **DR. NANCE:** I would like to say, although I don't work for the
29 agency anymore, but the purpose of the platform removal program
30 at Galveston was to help ensure that sea turtles and marine
31 mammals were not impacted by the explosive removal of the
32 platforms, and the reason the observers were out there was to
33 make sure that sea turtles are not in the area during that
34 process and marine mammals are not in the area, and so that's
35 why the observers are out there. It's not to monitor fish
36 kills, but it's to protect sea turtles and marine mammals.

37
38 **DR. MICKLE:** How do they know that, observing, that they're
39 there or not?

40
41 **DR. NANCE:** They go out a week before the platform removal and
42 monitor and see if any sea turtles are in the area, and they can
43 look for when the sea turtle surfaces or marine mammals surface,
44 and they do helicopter aerial surveys before the explosion, to
45 make sure there's not any within the impact zone, and so they've
46 done great over the years to make sure that those impacts are
47 not happening during the removal process.

48

1 **CHAIRMAN POWERS:** Thank you. This is very -- I think Benny, Dr.
2 Gallaway, was alluding to whether the council would want to deal
3 with this and whether we would, quote, unquote, allow it, and I
4 don't think -- I don't have any particular problems, and, in
5 fact, once information goes on the website, it's there, and you
6 don't have any choice. It's like social media.

7
8 How the council wants to proceed with this, I have no --
9 Personally, I don't have any problems with it, if you want to
10 have a discussion, or even invite Dr. Gallaway or whatever, and
11 I think Luiz can convey that as we go forward.

12
13 **DR. BARBIERI:** Yes, sir.

14
15 **DR. MICKLE:** I am speaking as a council rep, but the SSC's job
16 is to -- Is this a valid scientific study? Does it meet, I
17 guess, the standards of the SSC as an independent review, and
18 then the council can -- Then it can go to the council, or am I
19 missing something in that?

20
21 **MR. RINDONE:** That's certainly a valid path forward. I think
22 that this is a considerable body of work that's been done
23 though, and it's an update, and what the council might consider
24 is how they want to receive this information, if they want it to
25 be a part of the presentations they receive during the Full
26 Council session. Given the length of the presentation and the
27 amount of area it covers and the importance of the topic, maybe
28 something like that might be appropriate as a jumping-off point,
29 as opposed to having it as a component of the SSC report, and so
30 that's just a consideration.

31
32 **CHAIRMAN POWERS:** I think we leave the option, and I was sort of
33 -- Given what I already knew about platform removals, because I
34 actually did a -- I was one of Gregg Gitschlag's co-authors some
35 time ago, but I was trying to remember what the results we had
36 were, and that's one of the things that -- Having seen this, I
37 was planning to go back and start comparing things, and also
38 just because of my interest in stuff in the Gazey approach, and
39 I would want to familiarize myself with what's going on there,
40 but, beyond that, I personally don't have any worries about the
41 study itself, but, of course, it was also just presented to us,
42 and so --

43
44 **DR. GALLAWAY:** If I can, Gregg's results and you all's analysis
45 and the assessment of those results were bang-on for that depth
46 zone, and, as you move out deeper, you get different results,
47 but, given the proportions of fish involved, I am not sure -- I
48 don't know what the answer is yet.

1
2 **CHAIRMAN POWERS:** Okay. Is that enough guidance for Luiz to go
3 to the meeting?
4

5 **MR. MATENS:** If I may, Joe, it's probably not a surprise here
6 that this is of great interest to those of us that live in
7 Louisiana, and the fact that are fish are killed is one issue,
8 and that's a different issue.
9

10 From our standpoint, how do we replace the habitat, and, if it's
11 not a floater, if it's a rig that goes to the bottom, if it's in
12 water deeper than 150 or 200 feet, it can be cut off at ninety
13 feet, according to the Coast Guard regulations, and so we keep
14 the habitat, but the rig is gone. Now, you can argue that the
15 vertical distribution of fish changes.
16

17 For rigs that are shallower than that, you're supposed to take
18 the whole rig out, and we have locations where we can reef these
19 unused rigs, but, when you're towing this rig, you can tow it
20 about a knot or a knot-and-a-half, and, in many cases, it's
21 cheaper for the company to take them to town and scrap them and
22 salvage them.
23

24 We have a program to try to replace some of those, and the oil
25 companies will work with us, but what do you do about rigs that
26 are in forty feet of water, or fifty feet of water, or thirty
27 feet of water, which the people can reach with smaller boats,
28 and that's more activity that we are interested in, and so we
29 are siting sites where we can put structure on the bottom,
30 limestone, about three or four feet off the bottom and cause
31 that habitat to be replaced, if that's the right choice of
32 words, and we work very closely with the shrimp industry to try
33 to not add to their problems.
34

35 They were avoiding those rigs anyway, and we have 100 sites
36 sited right now, ready for permits, and we're going to utilize
37 them, and so we hope that we can keep our fishery, and I think
38 that we can, and it's expensive, and we have a lot of people
39 that are interested in helping us financially, companies and
40 individuals. If you want to have the Joe Powers Artificial
41 Reef, for \$100,000, God bless you, and we can put you on it, or
42 you can get ten friends. You can have the Joe Powers Family
43 Reef. Thank you. I couldn't resist. Thank you.
44

45 **CHAIRMAN POWERS:** That's out of my price range. Sorry. Doug.
46

47 **MR. GREGORY:** Benny, I assume that this is going to go to try to
48 be factored into an assessment, not only the mortality from the

1 removals, but I would imagine the mortality from the fishing
2 effort, or the fishing mortality, that was estimated at
3 different depth zones, and you only presented the shallow water,
4 and I presume it's less mortality in the deeper water, but an F
5 of 0.86 is pretty significant, and it would be interesting to
6 see if, given the number of rigs, how that translates into
7 overall F, and it's probably very minor, but it will be curious.

8
9 Just as a side note, back when I worked for the council before,
10 I had proposed that there be, and we were trying to protect red
11 snapper, that there be no fishing within 100 feet of an oil rig,
12 and I barely lived through it.

13
14 **CHAIRMAN POWERS:** Well, as Benny alluded to, and I would suspect
15 that, once you have this information together, there is a number
16 of different ways it could get integrated into the assessment,
17 and clearly it would be useful.

18
19 **DR. LORENZEN:** It seems to me that your fishing mortality rate
20 is not strictly a fishing mortality rate. It's sort of a
21 recapture rate, probably, right, and so this is how they are
22 recaptured in -- Those would be discarded and survive.

23
24 **DR. GALLAWAY:** Supposedly it's F, based on that dataset, and I
25 would have to -- I don't have the program MARK with me, and I
26 don't have it in the supplemental materials, but it's supposedly
27 an estimate of F for that situation, and I will show you the
28 model, and I've got the reference in the paper, and you can go
29 to that and see what's in there, and the data that fed it is in
30 that chart, and so you can reproduce the analysis and see what
31 it is, if it's not F, but I'm pretty sure it is.

32
33 **CHAIRMAN POWERS:** All right.

34
35 **DR. GALLAWAY:** Our plan is that, once we get the results from
36 our shockwave modeling people, once we get the mortality
37 estimates, and we have a size distribution, age distribution,
38 and biomass, and then we will -- I was planning on trying to --
39 Make Shannon leave the room, and hopefully John would get
40 someone to plug those numbers in, just like you and Gregg did,
41 and rerun the analysis with those sets of data, and we're doing
42 -- We're going to do the effects of removing the ones that were
43 removed in 2017 and 2018, and that corresponds with our data,
44 and then we're going to do various future scenarios of how many
45 platforms were removed within 100 miles of fishing ports, and
46 we're going to do several with different scenarios in our
47 mortality estimates, and so we still have lots of work to do.

48

1 **MR. RINDONE:** This is just to expand on that a little bit. Back
2 in SEDAR 31, one of our former staff members who has moved on to
3 other things, Mark Mueller, had worked on compiling all of the
4 available artificial and hard-bottom reef data that were
5 publicly available in the Gulf and quantified the spatial extent
6 of those artificial and hard-bottom areas, and they were -- That
7 was considered as part of trying to determine the impact of rig
8 removals on the red snapper population, and it was part of the
9 SEDAR 31 assessment, and that was using data through 2011 at the
10 time.

11
12 What came out of the assessment was that the effect of the
13 mortality on the species, due to the removals, didn't -- It
14 wasn't significant, in terms of its effect on the assessment and
15 total biomass, but new information, more data, more years, it's
16 always worth taking another look at.

17
18 **DR. GALLAWAY:** In response to that, we have those coverages, and
19 we have all the artificial reefs, and we have shipwreck
20 coverages, and we have all the pipeline and pipeline crossing
21 coverages, and one of the things that we're -- Another set of
22 coverage that I think is important is we have all the shrimp
23 trawl electronic logbook data, and that records the position of
24 a shrimp boat while at sea every ten minutes, and so, if you
25 plot those out, and you combine them all, you end up with a
26 black map, and it's just covered with black dots, except you see
27 a whole bunch of little white circle areas, or white areas.

28
29 Most of those, or some of those, you can relate to things like
30 the platforms or artificial reefs or shipwrecks, and we're
31 assigning all of those, and then there was a high proportion of
32 those, especially in the north-central Gulf of Mexico and
33 eastern Texas and western Louisiana, that corresponds to one of
34 Mandy's estimates of proportion of the stock location, and so
35 there is another set of data out there that defines, may define,
36 habitats that aren't being recorded, and it may change our views
37 as to the base distribution of red snapper in the Gulf of
38 Mexico, and so you all know that I will go in crazy directions,
39 but just to give you a warning.

40 41 **DISCUSSION OF ALMACO JACK LIFE HISTORY AND LANDINGS**

42
43 **CHAIRMAN POWERS:** Okay. Thank you. The next agenda item is
44 almaco jack life history, and Dr. Mendez-Ferrer is presenting
45 this information. I was retold here, and I think I was told
46 before, and I just forgot, that this has actually been requested
47 by the council, this information as well, and so this is a
48 response to them, but, in the same respect, as indicated before,

1 we should go through this process. Lee.

2
3 **DR. ANDERSON:** Without being rude, can I ask why the council
4 asked for this? Are they considering management for it? I am
5 completely in the dark, and I would like some background.

6
7 **CHAIRMAN POWERS:** John.

8
9 **DR. FROESCHKE:** I think the council has received some
10 information about the species is being targeted perhaps more
11 than it has historically in the past, and I think maybe it's FWC
12 or something that is considering regulations and things, and
13 they are considering if perhaps we should do more than we're
14 doing now.

15
16 **DR. ANDERSON:** Thank you for that.

17
18 **CHAIRMAN POWERS:** Is there species ID issues with amberjack too,
19 or let's get on to the talk, and probably this answers
20 everything.

21
22 **DR. NATASHA MENDEZ-FERRER:** I will go over all of that. Thank
23 you. My name is Natasha Mendez-Ferrer, and I just started
24 working with the council as of like two months ago, and so, like
25 it was mentioned, during the last council meeting in June, the
26 council requested some feedback from the SSC, given the new
27 regulations that are coming out for the almaco jack fishery.

28
29 The South Atlantic Council approved the establishment of a
30 twenty-inch minimum size limit, fork length, for the commercial
31 fisheries, and, as of July 1, the State of Florida also
32 implemented commensurate regulations for commercial fisheries of
33 almaco jack in Atlantic state waters.

34
35 The document that I shared with you has a summary of the life
36 history and the current regulations of almaco jack, as well as
37 some recent landings, so that we can compare what we're seeing.
38 Almaco jack is, like we have mentioned, there are some issues
39 with species identification, and it's a species that looks very
40 similar to amberjack, and it has a slightly more compressed
41 body, and a way to identify it also is by the length of their
42 dorsal fin, which tends to be longer in this species. Their
43 coloration can be silvery, and it can be kind of a bluish or an
44 olive green, as you can see in the photos in the document.
45 Juveniles have five to six well defined dark bars that extend
46 from the dorsal fin to the anal fin.

47
48 Almaco jack is actually a species that can be found globally,

1 and it's been reported in the western Atlantic waters, from
2 Massachusetts, including the Gulf of Mexico, Caribbean Sea, all
3 the way down to Argentina, and also in the Pacific, as well as
4 in the Indo-West Pacific Ocean.

5
6 The species mostly occurs offshore, and they are generally found
7 in nearshore waters, and common sizes for adult almaco jacks
8 have been reported to be twenty-two to thirty-five inches fork
9 length, but some of them have been reported to be forty-five
10 inches fork length. The larger ones that I've seen in the
11 literature have been mostly reported in the Pacific Ocean.

12
13 Almaco jack is one of those data-limited species, and we don't
14 really know much about their life history and spawning behavior,
15 as it was highlighted in the SEDAR 49 in 2006, as well as in the
16 five-year review of the essential fish habitat done by the Gulf
17 Council in the same year.

18
19 Right now, based on similar assumptions made for other *Seriola*
20 species, the almaco jack stock in the Gulf is considered to be a
21 single stock, and let me show you the -- This image was actually
22 extracted from the five-year EFH review, and, in that document,
23 you can see kind of a species profile that was developed for
24 almaco jack, and so that kind of maroon color and polygons that
25 you can see in this map are associated to benthic habitat where
26 almaco jack have been reported, and this can be hard bottom as
27 well as oil platforms and other artificial structures.

28
29 To kind of give you an idea, based on juvenile studies, it's
30 assumed that almaco jacks spawn in the spring and summer months,
31 and the juveniles -- The eggs and larvae are mostly pelagic, and
32 the juveniles tend to be closely associated with sargassum, and
33 they have been reported along the Florida Keys as well as the
34 Panhandle area of Florida, and almaco jack eggs have also been
35 reported near the Texas-Mexico border.

36
37 Like I mentioned, adults are mostly located offshore, and they
38 are closely associated with outer reef slopes, offshore banks,
39 and artificial reefs at depths of seventy to 600 feet. When
40 they are young, they mostly feed on small crustaceans and other
41 shrimp and other small fish also associated with the sargassum
42 complex that they use throughout that life cycle, and, as
43 adults, their diet shifts mostly to other -- To predominantly
44 fish.

45
46 We don't really know much about what size they reach maturity,
47 but almaco jack is actually a species of importance in
48 aquaculture, and so I reached out to Kampachi Farms in Hawaii,

1 which seems to be providing a lot of the brood stock that's
2 being used, at least in Latin America, for aquaculture of almaco
3 jack, and they said that they can see initial gonad development
4 in males within twenty months and in females within twenty-four
5 months, and this species tends to be ranging between seven to
6 nine pounds.

7
8 I did ask for size, but the response I got was that they deal
9 with fish in pounds and not in inches, and so I couldn't really
10 make a direct comparison to what I found in the literature
11 regarding sexual maturity.

12
13 Moving on to regulations, these two tables summarize the
14 regulations that apply to commercial and recreational fishing of
15 almaco jack in Gulf waters, and so, if you scroll up to the A,
16 Table A is for commercial and B is for recreational, and, as you
17 can see, in general, there isn't a minimum size limit for
18 commercial fishing of almaco jack. There isn't a trip limit,
19 and there is no closed season.

20
21 As of recently, the South Atlantic approved the minimum size
22 limit of twenty inches fork length, based on some public
23 testimony, and so the stakeholders were reporting that they were
24 catching fish that were large enough, and they were looking for
25 regulations that would maintain -- That would allow them to
26 reduce discards by maintaining the larger fish, because, when
27 they sell those to the restaurants, they have a higher market
28 value, and so they looked at their data, and they report that --
29 The data went from 2014 to 2016, and 88.5 percent of their
30 commercial landings were above that twenty-inch fork length, and
31 66 percent of the catch was above twenty-six inches, and so they
32 were assuming that regulatory discards are expected to be
33 minimal.

34
35 If we look at recreational almaco jack, it's included in the
36 Reef Fish FMP in the Gulf, and so it's part of the twenty-fish
37 aggregate for the bag limits. Again, there is no size limit for
38 recreational fishing, and there is no closed season.

39
40 Now I'm going to be going over some of the data, landings data,
41 for the Gulf of Mexico, and you will see that in your document
42 in Figures 2 and 3, which contain the time series from 2000 to
43 2017.

44
45 I will show you the data based on states, but just note that,
46 for confidentiality reasons, I did have to group certain states,
47 Alabama and Florida and Louisiana and Mississippi, and so, in
48 this figure, on the Y-axis, you're going to see landings in

1 pounds of whole fish, whole weight, and, on the X-axis, you're
2 going to see the time series. The purple line is commercial
3 landings, and the light blue is recreational landings, and so
4 you can see that most of the fish that are being reported in
5 these landings mostly come from the recreational sector.

6
7 Since the ACL for the jacks complex, which includes almaco jack,
8 lesser amberjack, and banded rudderfish, was set to 312,000
9 pounds, and we have basically stayed below the ACL since it was
10 established.

11
12 Here we're looking at the state data, and the Plot A is for
13 commercial and for B is for recreational again, and the Y-axis
14 is your landings, and the X-axis is your years. Overall, most
15 of the almaco jack come from the Alabama and Florida region. As
16 we can see, on the A, in the navy blue, landings for Louisiana
17 and Mississippi have been declining in the past couple of
18 decades, and then Texas -- Trip reporting for Texas began in
19 2007, and so that's why we don't start to see that line until
20 after that timeframe. Also, the max here you can see here
21 reported for the commercial fishery is close to 40,000, whereas,
22 in the recreational, we're in the 100,000 pounds.

23
24 If we were to look at the size and how big are these almaco
25 jacks that we're catching in the Gulf and how it would -- If we
26 were to apply a minimum size limit to this fish, how would this
27 compare to what the South Atlantic is doing, and hopefully you
28 can understand from this graph.

29
30 On the primary Y-axis is frequency of the size, and, on your X-
31 axis, you will have your size of the fish in fork length, in
32 inches, and, on the secondary Y-axis, it will be percent of the
33 catch, and the data that I'm including here is for 3,687 fish
34 sampled, and this data comes from the Trip Interview Program
35 data.

36
37 The South Atlantic was reporting that, from 2004 to 2016, 88.5
38 percent of their catch was above the twenty-inch fork length.
39 For the data that I'm showing you here, 57 percent of our catch
40 is equal to or larger than a twenty-inch fork length, and so,
41 instead of having 11.5 percent discards, like the South Atlantic
42 showed in their report, we would be looking at 43 percent, which
43 is what the dashed line is looking at.

44
45 **CHAIRMAN POWERS:** But this Figure 4 is just the commercial
46 sector, isn't it?

47
48 **DR. MENDEZ-FERRER:** Yes. Sorry. Yes, it is the commercial

1 sector in the Gulf. With this, I would like to hear some input
2 on what thoughts you think we should bring up to the council to
3 consider. Thank you.

4
5 **CHAIRMAN POWERS:** Okay. Thank you very much. Are there any
6 thoughts about this? In particular, I guess what I would like
7 to hear more is what problem is it that the council wants to
8 address?

9
10 **DR. ANDERSON:** Can we go back one step further? What plans is
11 this stock in now, or is it a --

12
13 **DR. MENDEZ-FERRER:** It's in the Reef Fish.

14
15 **CHAIRMAN POWERS:** Let me start with I think it's Harry that's on
16 the webinar, or whomever is on the webinar.

17
18 **MR. ADRIANCE:** Actually, it's Jason. I had a couple of
19 comments, if we can go to that graph or chart 3B, and so, as we
20 discussed earlier in the day, the calibration between state
21 surveys and MRIP and -- Things aren't there yet, and, since LA
22 Creel covers all of our species, and not just specific species,
23 from 2014 forward there I don't think is very comparable, if
24 you're putting it in with MRIP landings.

25
26 I noticed that the average weights you used were 2000 through
27 2017, and I assume the latter half of that is coming from MRIP
28 data, at least you're applying that to what would be Louisiana
29 numbers reported through LA Creel, and so I don't know if you
30 can necessarily put those on the same graph from 2014 forward.

31
32 I understand the confidentiality issue in the commercial, but
33 was there a reason those recreational landings were grouped, and
34 I guess the same thing would apply to the Graph Number 2.
35 Thanks.

36
37 **DR. MIKE LARKIN:** I helped with the recreational. Some of the
38 headboat landings was confidential, and that's why some of the
39 recreational had to be pulled together. LA Creel is included,
40 and you're right that it is apples to oranges, but I feel like
41 we're stuck. In like 2014 and 2015, what else do we have? Like
42 MRIP is not in Louisiana anymore, and so, in terms of Louisiana
43 private and charter landings -- I am including LA Creel, because
44 that's what I have for Louisiana.

45
46 **CHAIRMAN POWERS:** I think, to Jason's point though, one should
47 be careful about the comparisons, because of the issues with how
48 the different surveys are actually conducted. Kari, did you

1 have a comment?

2
3 **DR. MACLAUHLIN-BUCK:** Yes, and so it's with year-three, and so,
4 qualitatively, and I know you can't tell us some specifics about
5 where the data come from, and that's why you combined them, but,
6 qualitatively, from the data, and maybe Mike Larkin can talk
7 about this also, does it look like it's the Panhandle of
8 Florida? I guess, qualitatively, where are we talking about the
9 data indicate where they're fishing?

10
11 What I am looking for a little bit is there may not need to be
12 Gulf-wide, and it could be very specific area, Florida or
13 something, and so what did you see in that, on each of those? I
14 realize the commercial is pretty small, but is it mostly --
15 Could you see any like county-level I guess that you could
16 share, qualitatively, with us?

17
18 **DR. LARKIN:** I just looked at it by state, and definitely
19 Florida drives the bus, in terms of the most landings, and
20 Alabama is second, and I think -- I am just kind of ballparking
21 here, and so I can't answer your question, Kari, but, in terms
22 of state, definitely Florida is the dominant, and second is
23 Alabama, and then I would say Louisiana, Mississippi, and Texas
24 after that, in terms of that's how specific I can get right now.

25
26 **DR. MACLAUHLIN-BUCK:** With that, in B, with that information,
27 that spike in 2009, with that kind of lingering around 50,000 to
28 100,000 for the Alabama/Florida line, do you think that
29 indicates that might just be a reflection of MRIP and not
30 necessarily a pattern in that data? Do you feel like those
31 recreational probably have been pretty stable?

32
33 **DR. MENDEZ-FERRER:** From my understanding, it might be an
34 artifact of just the data collection process.

35
36 **CHAIRMAN POWERS:** Luiz.

37
38 **DR. BARBIERI:** If I may add to that, another issue is
39 identification, species ID, with this species and lesser
40 amberjack and greater, and you may remember, when we were
41 looking at the landings only ABC setting for this species, that
42 it's kind of hard to determine when the landings were stable,
43 because there are these sometimes peaks that we can't guarantee
44 that they represent specifically that species, because it's
45 whatever was reported and not necessarily representing that
46 species.

47
48 I can tell you that, in our Gulf Reef Fish Survey in the Gulf

1 that we implemented for reef fish specifically, we have these
2 three species listed together, because it's so difficult to get
3 information on a species basis for them.

4
5 **DR. LARKIN:** I agree with that, Luiz, although I feel like, with
6 the MRIP and LA Creel and Texas, they have dockside observers
7 identifying them, but you're right that the commercial is -- The
8 dealers, you're hoping that they identify them correctly, and
9 the TIP data, the commercial length, the same thing. They also
10 have commercial dockside intercepts as well, and so the
11 commercial landings, you're right, there could be certainly an
12 ID, but I feel like I'm confident with the recreational, because
13 some dockside fishers have identified them.

14
15 **DR. BARBIERI:** Remember discards as well, and this is just
16 landings that do not integrate discards at all.

17
18 **DR. LARKIN:** It's just landings, yes.

19
20 **DR. BARBIERI:** So not catch?

21
22 **DR. MENDEZ-FERRER:** That is what made it to the dock.

23
24 **CHAIRMAN POWERS:** Thank you. Are there other comments? Again,
25 I think Luiz, who is reporting on this to the council, there is
26 certain caveats with the data that they should be aware of.
27 Everybody wants to talk. Good.

28
29 **DR. LORENZEN:** A couple of things. One is for the maturation,
30 and so, if you have the animal in culture, they always mature
31 much earlier than in the wild, and so I would be careful using
32 that.

33
34 The other question, and, of course, this is also a species that
35 will be in that experimental cage off of Sarasota, and so
36 there's an aquaculture interest also here in the region, but,
37 finally, this was part of the data-limited assessment, right,
38 and so I was wondering -- I was on that panel, and I was looking
39 back, and I can't remember what we did with almaco jack, but I
40 guess there should be information there that should also be
41 conveyed.

42
43 **DR. CALAY:** Yes, it was part of SEDAR 49, the data-limited
44 assessment, and we did not produce management advice from that
45 data-limited attempt, and I think a large part of our concerns
46 were the species misidentification issues, but, that being said,
47 we should definitely be aware of this document and include it in
48 the triage activities for any work that we intend to conduct

1 with almaco jack in the future.

2
3 **CHAIRMAN POWERS:** Doug.

4
5 **MR. GREGORY:** The recreational length frequencies are missing,
6 and, unlike the South Atlantic, which had 88 percent of their
7 commercial harvest above the size limit, only 57 percent of the
8 Gulf harvest supposedly is above the size limit, and the council
9 is asking us to provide input as to whether similar regulations
10 need to be implemented, or should be implemented, in the Gulf,
11 and I won't use the word "need", and I don't know if the request
12 came from the State of Florida.

13
14 The State of Florida didn't implement a size limit for the Gulf
15 side of the state, and the thing I see, the thing happening more
16 and more with the Gulf Council, is them responding to maybe a
17 request from a state or fishermen about concerns and
18 implementing regulations without science, without the stock
19 assessment, and they did something similar with cobia recently
20 and again with red grouper, and they just changed the size limit
21 without real analysis, and that's a concern to me.

22
23 I mean, I would be against recommending any implementation of
24 regulations at this point, but, other than that, the data is
25 kind of incomplete, and I would hope the Gulf Council doesn't
26 move forward with implementing something based on whatever
27 information they have at this point in time.

28
29 **DR. TOLAN:** Just a follow-up on the SEDAR 49. I was part of the
30 panel for that also, and I did the writeup for the early life
31 history, and there was virtually no information at all about
32 eggs and larvae and juveniles for this species, and one of the
33 stumbling blocks was the idea was to use the same sort of
34 parameters associated with greater amberjack and just substitute
35 that in for the almaco jack, and the panel thought that wasn't a
36 good idea, and so there was a lot of research recommendations
37 that came out of that, and we didn't provide any management
38 advice at all, because there is just virtually nothing known
39 about their early life history.

40
41 **DR. CALAY:** Certainly, at the time of the SEDAR 49 data-limited
42 workshop, we felt there was insufficient information to develop
43 management advice from a data-limited approach, and so we agreed
44 with the SSC's recommendation to proceed with catch only.

45
46 **MR. GREGORY:** One caveat to what I said. I mean, if we had good
47 size at maturity information, and I base a lot of how I feel
48 about fisheries on that, relative to the size of entering into

1 the fishery, but I don't see that, and I don't know if the South
2 Atlantic Council had information for the fish in their area, as
3 to maturity.

4
5 **DR. MICKLE:** This is a pretty large species in the aquaculture
6 world and entering the Gulf of Mexico, and it is right now, as
7 we speak, and there is a lot of information about the early life
8 history from I guess a private standpoint that may not make it
9 into scientific literature, but they have messed with this
10 species, from an aquaculture perspective, quite a bit, and
11 there's a lot of information out there.

12
13 Maybe not in wild-stock scenarios, but it is out there, and I
14 just don't know if it's making it to this, which kind of
15 concerns me a little bit, and I haven't looked, but, the way
16 that I hear the aquaculturists talk, they seem to know
17 absolutely everything that is needed to know for this species to
18 be artificially grown in an aquaculture setting, and so it seems
19 like there is information out there.

20
21 Whether it's applicable to a wild-stock scenario or a stock
22 assessment, that is a discussion I think the SSC needs to have,
23 but, as far as things that we don't know about this species,
24 you've kind of got to think about it. Is there or isn't there,
25 and maybe we should look, or have somebody look. Thank you.

26
27 **DR. LORENZEN:** There would be growth and maturity information
28 that can be from aquaculture, but they do grow and mature
29 differently in culture from the wild, but with that caveat.

30
31 **MR. GREGORY:** I just consulted my personal stock assessment
32 reference, Google, and I found something that just length at
33 maturity is eighty-one centimeters, and so what is that, about
34 thirty-two inches? I would definitely be opposed to having a
35 size limit as low as twenty inches, but, then again, if you put
36 a size limit at thirty-two -- But that's the same as greater
37 amberjack, and so I wonder if this, again, is confused with
38 greater amberjack.

39
40 **DR. MENDEZ-FERRER:** I think I've seen that paper, and, if I'm
41 correct, it was based on a single individual.

42
43 **CHAIRMAN POWERS:** I am a firm believer in the process, and there
44 was a data-limited workshop that went along that actually looked
45 at a lot of these things, and it's actually cited in this
46 document, with the website, and so I think that the council
47 should be reminded that that exists, and I'm not sure what else
48 we can say beyond that though, unless somebody has something

1 specific.

2
3 **DR. BARBIERI:** Joe, I interpret this presentation and the whole
4 discussion by the SSC a bit differently, I guess, than Doug. I
5 was thinking of this as more an informational piece, Natasha and
6 staff working with the Science Center and SERO to put together
7 something that is starting to compile information on this and
8 bounce it off of us, to see if there are any suggestions here on
9 is there room for improvement or something that raises a red
10 flag or not, and what else we should put here or maybe take
11 something out, but I don't see any proposal here explicit in
12 this document for size regulations, is there?

13
14 **MR. GREGORY:** If I may, on page 6, the first sentence of this
15 paragraph reads: During the June 2019 meeting, the Gulf Council
16 requested the SSC to review the life history and recent landings
17 data for almaco jack in the Gulf and provide feedback on the
18 implementation of similar regulations that have been recently
19 accepted. They are asking for a recommendation of whether the
20 Gulf should consider a twenty-inch size limit, basically, and
21 they want our feedback on that.

22
23 **DR. BARBIERI:** Is that correct, because this was not explicit in
24 our scope of work, by the way, and so just -- The SSC is
25 considering an evaluation of implementation of proposed size
26 limits for almaco jack.

27
28 **CHAIRMAN POWERS:** I wonder what the basis is for us to make a
29 recommendation, essentially, other than if you knew something as
30 broad as Doug is suggesting, if you know something about age at
31 maturity, and it's sort of a rule of thumb that's always been
32 used, is to make sure that they spawn once before they die kind
33 of thing.

34
35 **MR. RINDONE:** I was just going to clarify some of the scope of
36 work. Like Natasha had said, the South Atlantic and the State
37 of Florida, at least in the Atlantic waters, has increased the
38 commercial size limit only to twenty inches, and that's largely
39 for market reasons, and it's not based on anything biological,
40 because, by and large, like Natasha reviewed, those data don't
41 exist for wild stocks, and so there may be a plethora of data
42 for growing these organisms in captivity using feed, but we
43 don't have any way to compare that information to anything from
44 wild stocks, because the wild-stock information is non-existent.

45
46 All the council is asking the SSC to do is to take a look at
47 what she provided, and, if there's appropriate feedback to
48 provide to the council with respect to the decision that was

1 made by the South Atlantic Council and the State of Florida,
2 then provide some feedback, but you are by no means being told
3 to pick a size limit.

4
5 **DR. MACLAUHLIN-BUCK:** My feedback would be, with the
6 information provided, there does not seem to be an issue, with
7 the information that we have, and it doesn't seem like there has
8 been a large increase. If they are anticipating an increase,
9 like it's getting more popular, or the jacks complex in general
10 is getting more popular, and they anticipate some identification
11 issues, then maybe look into it and being proactive, but, with
12 what we have right now, and with that it's not a super popular
13 fish that seems to be growing in targeting, that there doesn't
14 seem to indicate to be a reason for additional regulations at
15 this time.

16
17 The only thing that I can think of is having -- If there is a
18 consistency for Florida, that the social sometimes with
19 consistency -- There are some social benefits and enforcement
20 benefits, but that's the only thing that I can see of anything
21 moving forward. There doesn't seem to be anything in here that
22 would indicate that there would need to be additional
23 regulations for almaco at this time.

24
25 **CHAIRMAN POWERS:** I guess, if they are considering something for
26 the commercial sector, for reasons other than biological
27 conservation, and the information there would be presumably
28 appropriate, if those are the size frequencies that we have, and
29 that's the information, but it only relates to the commercial
30 sector. Should we leave it to Luiz, the prerogative of how to
31 couch this discussion?

32
33 **MR. RINDONE:** You will do great, Luiz.

34
35 **CHAIRMAN POWERS:** I would sort of remind them that -- The
36 difficulty I'm having is the citation there is for the data-
37 limited workshop, and I don't remember much of the details of
38 it, but you should probably look at that before you present this
39 information, because it was summarized by Shannon and Jim, and
40 so make that part of the --

41
42 **DR. BARBIERI:** Fortunately, I chaired the review panel in Miami,
43 and so I have a lot of information on that.

44
45 **CHAIRMAN POWERS:** All right. Thank you. We are at Other
46 Business. I am going to leave it to Luiz to present this, and
47 this was sort of late in the game, when I was actually
48 traveling, and so I'm not real familiar with it, but it's work

1 put together by several people, including Michael Drexler, who
2 is in the audience, and some issue that Bob Gill has also
3 noticed, and Luiz, and so let me just pass it on to Luiz to
4 present the information there.

5
6 **OTHER BUSINESS**

7
8 **DR. BARBIERI:** Thank you, Mr. Chairman. By the way, this did
9 come in late in the game, and the idea, at this meeting, was to
10 basically make the SSC aware of this document and the issue to
11 be discussed and perhaps have a more in-depth discussion at
12 another future meeting, the next one, if at all possible, if
13 appropriate to be included on the agenda.

14
15 Basically, Mike, with Ocean Conservancy, and I don't mean to
16 speak for him, but there is some bullet points there in the
17 document that you put together that basically identify that some
18 of the catch advice projections that are coming out, yield
19 stream projections that are coming out of a number of recent
20 assessments seem to be fairly high, recommending a fairly level
21 of landings or take for some of these stocks that go beyond
22 where the current landings have been.

23
24 There is a jump, a spike, in the projections coming out of the
25 assessment that make recommendations of OFL and ABC that are way
26 above where recent landings had been, and Bob Gill, just out of
27 curiosity, and because I guess we are both geeks, had called me
28 out of the blue a couple of weeks ago, or last week, and we were
29 talking just about what he was seeing in the red grouper
30 assessment that was just being finished and the report being
31 posted on the SEDAR website.

32
33 I did go look at that document, and, sure enough, it has an OFL
34 going forward that basically doubles the level of landings that
35 we had just recently, last fall, basically brought the landings,
36 the ACL, back down to about four-million pounds, because the
37 industry has not been able to land their quota, and the fish has
38 been identified as being in a low level of abundance and
39 biomass, and so this, going forward, was a bit of a surprise in
40 that projection spike.

41
42 In this document that eventually you should go through, you see
43 that Mike provides other examples, greater amberjack and cobia
44 and mackerel, king mackerel, where the same thing happens, and
45 the Science Center has been aware of this issue, and we have
46 been discussing it with Matt Smith and Shannon, and it's
47 something that hopefully they can come prepared for the next
48 meeting to look into and give us some guidance on having it

1 addressed. Bob actually crafted a draft motion to put before
2 the committee requesting the Science Center to do some follow-up
3 on this.

4
5 **MR. GILL:** To add to that, what came to my point -- I'm on the
6 red grouper assessment panel, and, sure enough, that yield spike
7 occurs immediately after the present, and it occurred to me that
8 that occurs in most assessments, and I would say virtually all,
9 for the last six or seven years, and what we do typically is
10 follow the yield curve, and so we derive our OFL and ABC
11 recommendations, including constant catch, that includes that
12 spike.

13
14 The question, in my mind, was, well, if that spike is not real,
15 we're predicating funky advice, and so I thought that it was
16 important enough, and I know the Science Center has talked about
17 it, that we have the red grouper review coming up to us the next
18 meeting, with that spike in it, from which we're supposed to --
19 We need to provide OFL and ABC recommendations, but then the
20 issues comes of what do we do with that spike.

21
22 **I would make the motion that's on the board, that the committee**
23 **requests the Science Center analyze the assessment outputs of**
24 **yield stream projections that result in a spike in yield in the**
25 **first year or years of the projection to determine cause and**
26 **evaluate potential solutions.** The idea being that this will
27 provide some basis for a better discussion prior to us making
28 those decisions on red grouper.

29
30 **CHAIRMAN POWERS:** Is there a second? We have a second.

31
32 **DR. CALAY:** I just wanted to say that the Science Center -- Rick
33 actually offered to come to our Science Center on Thursday and
34 Friday, and he asked what topics we would like to discuss, and
35 this is on our list, and so we are aware that, especially in the
36 recent red grouper assessment, we had some concerns about the
37 projections, and so that is something we will be discussing with
38 Rick this week, and, if there are larger issues that we need to
39 tackle, you will certainly become aware of them.

40
41 **MR. GREGORY:** At the Caribbean SEDAR review workshop a couple of
42 weeks ago, this came up, and Adyan and Bill Harford were doing
43 the assessment, and I don't recall exactly what their
44 explanation was, but it had something to do with, I thought, a
45 terminal year of two years ago and a projection starting next
46 year and an accumulation of -- In the model, an accumulation of
47 juveniles or something that come into the projection. I can't
48 give a better explanation of that, but there was a discussion,

1 and the answer at the time made sense to me, but I'm sorry that
2 I don't recall.

3
4 **CHAIRMAN POWERS:** There could be a lot of reasons for it, and I
5 am not -- My reaction is that sometimes, if it's that sort of
6 thing, sometimes it will go the other direction, and it won't be
7 a spike, and it will be a low point, depending on what the time
8 series of recruitment is.

9
10 There is also how well you have that interim years catches and
11 how they get estimated, and so there's a number of things like
12 that, but I am encouraged that this will be addressed before
13 that.

14
15 **DR. CALAY:** In the context of red grouper, this is a fairly --
16 We are trying to handle a stock assessment that has allocations
17 in it and that has a red tide effect in it, and we had some
18 concerns, which we will discuss with Rick, and we will let you
19 know what our findings are, but you are correct that, in other
20 cases, there are a variety of reasons why this may arise and be
21 completely expected, and one of them is recruitment deviations
22 that are positive in the terminal years, and another reason
23 might be that we're well above SSB at MSY and the yield stream
24 suggests that we can fish the stock down, and that tends to
25 happen rapidly in the projections. There are reasons why this
26 can occur and be normal, but we'll make sure that what we're
27 doing with projections is as appropriate as we can make it, and
28 we will report back.

29
30 **CHAIRMAN POWERS:** Are there any objections to this motion? If
31 not, thank you very much.

32
33 **MR. RINDONE:** Joe, the next meeting is September 17 and 18.

34
35 **CHAIRMAN POWERS:** Ryan reminded me that our next meeting in
36 September 17 and 18, and hopefully it won't get changed late in
37 the game, like this one was.

38
39 **DR. CALAY:** No, this one will not.

40
41 **CHAIRMAN POWERS:** Rick.

42
43 **DR. METHOT:** Thanks, Joe. Just briefly, a follow-up from the
44 ABC control rule discussion, and I checked with our National
45 Standard 1 Technical Guidance Working Group, and there is a
46 subset of it that has developed a table of all the OFL control
47 rules and all the ABC control rules by tier by council, and so
48 we have quite a large table with all of them laid out with the

1 most recent iterations of them, and so it's going to be a
2 valuable resource for everybody, and it's not quite available to
3 distribute, but we can make it available, if you would like, for
4 the group that's going to be deliberating on ABC control rules.

5
6 **CHAIRMAN POWERS:** Great. Thank you. With that, I believe we
7 have finished our business, and thank you all for participating,
8 and the meeting is adjourned.

9
10 (Whereupon, the meeting adjourned on July 31, 2019.)

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12 - - -
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